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CAR. I. TABORIS.

15772/c/2

Charles Greenwood.

By James Bruce.

Complete in itself, being Vol. V. of his Travels

60700

SELECT SPECIMENS

OF

NATURAL HISTORY,

COLLECTED IN

Travels to discover the Source of the NILE,

IN

EGYPT, ARABIA, ABYSSINIA, AND NUBIA.

VOL. V.

" AND HE SPAKE OF TREES, FROM THE CEDAR-TREE THAT IS IN LEBANON, EVEN UNTO " THE HYSSOP THAT SPRINGETH OUT OF THE WALL: HE SPAKE ALSO OF BEASTS, AND OF " FOWL, AND OF CREEPING THINGS, AND OF FISHES."

1 KINGS, chap. iv. ver. 33.

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INTRODUCTION.

AS it has been my endeavour, throughout this hiſtory, to leave nothing unexplained that may aſſiſt the reader in underſtanding the different ſubjects that have been treated in the courſe of it, I think myſelf obliged to ſay a few words concerning the manner of arranging this Appendix. With regard to the Natural Hiſtory, it muſt occur to every one, that, however numerous and reſpectable they may be who have dedicated themſelves entirely to this ſtudy, they bear but a very ſmall proportion to thoſe who, for amuſement or inſtruction, ſeek the miſcellaneous and general occurrences of life that ordinarily compoſe a ſeries of travels.

By preſenting the two ſubjects promiſcuouſly, I was apprehenſive of incommoding and diſguſting both ſpecies of readers. Every body that has read Tournefort, and ſome other authors of merit of that kind, muſt be ſenſible how unpleaſant it is to have a very rapid, well-told, intereſting narrative, concerning the arts, government, or ruins of Corinth, Athens, or Epheſus, interrupted by the appearance of a nettle or daffodil, from ſome particularity which they may poſſeſs, curious and important in the eye of a botaniſt, but inviſible and indifferent to an ordinary beholder.

To prevent this, I have placed what belongs to Natural Hiſtory in one volume or appendix, and in ſo doing I hope to meet the approbation of my ſcientific botanical readers, by laying the different ſubjects all together before them, without ſubjecting them to the trouble of turning over different books to get at any one of them. The figures, landſcapes, and a few other plates of this kind, are illuſtrations of what immediately paſſes in the page; theſe deſcriptions ſeldom occupy more than a few lines, and therefore ſuch plates cannot be more ornamentally or uſefully placed than oppoſite to the page which treats of them.

Some further conſideration was neceſſary in placing the maps, and the Appendix appeared to me to be by far the moſt proper part for them. The maps, whether ſuch as are general of the country, or thoſe adapted to ſerve particular itineraries, ſhould always be laid open before the reader, till he has made himſelf perfectly maſter of the bearings and diſtances of the principal rivers, mountains, or provinces where the ſcene of action is then laid. Maps that fold lie generally but one way, and are moſtly of ſtrong paper, ſo that when they are doubled by an inattentive hand, contrary to the original fold they got at binding, they break, and come aſunder in quarters and ſquare pieces, the map is deſtroyed, and the book ever after incomplete: whereas, even if this misfortune happens to a map placed in the Appendix, it may either be taken out and joined anew, or replaced at very little expence by a freſh map from the bookſeller.

I shall detain the reader but a few minutes with what I have further to ſay concerning the particular ſubjects of

Natural Hiſtory of which I have treated. The choice I know, though it may meet with the warmeſt concurrence from one ſet of readers, will not perhaps be equally agreeable to the taſte of others. This I am heartily ſorry for. My endeavour and wiſh is to pleaſe them all, if it were poſſible, as it is not.

The firſt ſubject I treat of is trees, ſhrubs, or plants; and in the ſelecting of them I have preferred thoſe which, having once been conſidered as ſubjects of conſequence by the ancients, and treated largely of by them, are now come, from want of the advantage of drawing, lapſe of time, change of climate, alteration of manners, or accident befallen the inhabitants of a country, to be of doubtful exiſtence and uncertain deſcription; the aſcertaining of many of theſe is neceſſary to the underſtanding the claſſics.

It is well known to every one the leaſt verſant in this part of Natural Hiſtory, what a prodigious revolution has happened in the uſe of drugs, dyes, and gums, ſince the time of Galen, by the introduction of thoſe Herculean medicines drawn from minerals. The diſcovery of the new world, beſides, has given us vegetable medicines nearly as active and deciſive as thoſe of minerals themſelves. Many found in the new world grow equally in the old, from which much confuſion has ariſen in the hiſtory of each, that will become inextricable in a few generations, unleſs attended to by regular botaniſts, aſſiſted by attentive and patient draughts-men ignorant of ſyſtem, or at leaſt not ſlaves to it, who ſet down upon paper what with their eyes they ſee does exiſt, without amuſing themſelves with imagining, according to rules they have themſelves made, what it regularly

ly ſhould be. One drawing of this kind, painfully and attentively made, has more merit, and promotes true knowledge more certainly, than a hundred horti ſicci which conſtantly produce imaginary monſters, and throw a doubt upon the whole. The modern and more accurate ſyſtem of botany has fixed its diſtinctions of genus and ſpecies upon a variety of ſuch fine parts naturally ſo fragil, that drying, ſpreading, and preſſing with the moſt careful hands, muſt break away and deſtroy ſome of thoſe parts. Theſe deficient in one plant, exiſting in another in all other reſpects exactly ſimilar, are often, I fear, conſtrued into varieties, or different ſpecies, and well if the misfortune goes no farther. They are preciſely of the ſame bad conſequence as an inaccurate drawing, where theſe parts are left out through inattention, or deſign.

After having beſtowed my firſt conſideration upon theſe that make a principal figure in ancient hiſtory, which are either not at all or imperfectly known now, my next attention has been to thoſe which have their uſes in manufactures, medicine, or are uſed as food in the countries I am deſcribing.

The next I have treated are the plants, or the varieties of plants, unknown, whether in genus or ſpecies. In theſe I have dealt ſparingly in proportion to the knowledge I yet have acquired in this ſubject, which is every day increaſing, and appears perfectly attainable.

The hiſtory of the birds and beaſts is the ſubject which occupies the next place in this Appendix; and the

the rule I follow here, is to give the preference to ſuch of each kind as are mentioned in ſcripture, and concerning which doubts have ariſen. A poſitive precept that ſays, Thou ſhalt not eat ſuch beaſt, or ſuch bird, is abſolutely uſeleſs, as long as it is unknown what that bird and what that animal is.

MANY learned men have employed themſelves with ſucceſs upon theſe topics, yet much remains ſtill to do; for it has generally happened, that thoſe perfectly acquainted with the language in which the ſcriptures were written, have never travelled nor ſeen the animals of Judea, Paleſtine, or Arabia; and again, ſuch as have travelled in theſe countries, and ſeen the animals in queſtion, have been either not at all, or but ſuperficially acquainted with the original language of ſcripture. It has been my earneſt deſire to employ the advantage I poſſeſs in both theſe requiſites, to throw as much light as poſſible upon the doubts that have ariſen. I hope I have done this freely, fairly, and candidly; if I have at all ſucceeded, I have obtained my reward.

As for the fiſhes and other marine productions of the Red Sea, my induſtry has been too great for my circumſtances. I have by me above 300 articles from the Arabian gulf alone, all of equal merit with thoſe ſpecimens which I have here laid before the public. Though I have ſelected a very few articles only, and theſe perhaps not the moſt curious, yet as they are connected with the trade of the Red Sea as it was carried on in ancient times, and may again be reſumed, and as of this I have treated profeſſedly, I have preferred theſe, as having a claſſical foundation, to many others more

curious and leſs known. Engraving in England has advanced rapidly towards perfection, and the prices, as we may ſuppoſe, have kept proportion with the improvement. My ſmall fortune, already impaired with the expence of the journey, will not, without doing injuſtice to my family, bear the additional one, of publiſhing theſe numerous articles, which, however deſireable it might be, would amount to a ſum which in me it would not be thought prudent to venture.

If Egypt had been a new, late, and extraordinary creation, the gift of the Nile in theſe latter times, as ſome modern philoſophers have pretended, the leaſt thing we could have expected would have been to find ſome new and extraordinary plants accompany it, very different in figure and parts from thoſe of ancient times, made by the *old unphiloſophical* way, the *fiat* of the Creator of the univerſe. But juſt the contrary has happened. Egypt hath no trees, ſhrubs, or plants peculiar to it. All are brought thither from Syria, Arabia, Africa, and India; and theſe are ſo far from being the gift of the Nile, as ſcarcely to accuſtom themſelves to ſuffer the quantity of water that for five months covers the land of Egypt by the inundation of that river.

Even many of thoſe that the neceſſities of particular times have brought thither to ſupply wants with which they could not diſpenſe, and thoſe which curious hands have brought from foreign countries are not planted at random; for they would not grow in Egypt, but in choſen places formerly artificially raiſed above level, for gardens, and pleaſure-ground, where they are at this day watered by machinery; or upon banks above the caliſhes, which though

though near the water, are yet above the level of its annual inundation. Such is the garden of Mattareah, ſometimes filled with exotic plants from all the countries around, from the veneration or ſuperſtition, pilgrims and derviſhes, the only travellers of the eaſt, have for that ſpot, the ſuppoſed abode of the Virgin Mary when ſhe fled into Egypt, ſometimes, as at preſent, ſo neglected as to have ſcarce one foreign or curious plant in it.

The firſt kind of theſe adventitious productions, and the oldeſt inhabitant of Egypt brought there for uſe, is the ſycamore, called Giumez* by the Arabs, which from its ſize, the facility with which it is ſawn into the thinneſt planks, and the largeneſs of theſe planks correſponding to the immenſe ſize of the tree, was moſt uſefully adapted to the great demand they then had for mummy-cheſts, or coffins, which are made of this tree only: in order to add to its value, we may mention another ſuppoſed quality, its *incorruptibility*, very capable of giving it a preference, as coinciding with the ideas which led the Egyptians to thoſe fantaſtic attempts of making the *body eternal*.

This laſt property, I ſuppoſe, is purely imaginary, for though it be true, tradition ſays, that all the mummy-cheſts, which have been found from former ages, were made of ſycamore, though the ſame is the perſuaſion of latter times, and the fact is ſo far proven by all the mummy-cheſts now found being of that wood, yet I will not take upon me to vouch, that incorruptibility is a quality of this particular

* Signifying a fig-tree, from the multitude of figs which grow round the trunk.

tree. I believe that ſeaſoned elm, oak, or aſh, perhaps even fir, laid in the dry ſands of Egypt perfectly ſcreened from moiſture, and defended from the outward air, as all mummy-cheſts are, would likewiſe appear incorruptible; and my reaſon is, that having got made, while at Cairo, a caſe for a teleſcope of ſycamore plank, I buried it in my garden after I came home from my travels, ſo as to leave it covered by half a foot of earth; in leſs than four years it was entirely putrid and rotten. And another teleſcope caſe of the cedar of Lebanon appeared much leſs decayed, though even in this laſt there were evident ſigns of corruption. But even ſuppoſe it true, that theſe planks have been found incorruptible, a doubt may ſtill ariſe, whether they do not owe this quality to a kind of varniſh of reſinous materials with which I have ſeen almoſt all the mummy-cheſts covered, and to which materials the preſervation of the mummy itſelf is in part certainly owing. The ſycamore is a native of that low warm ſtripe of country between the Red Sea and mountains of Abyſſinia; we ſaw a number of very fine ones before we came to Taranta; they are alſo in Syria about Sidon, but inferior in ſize to the former; they do not ſeem to thrive in Arabia, for want of moiſture.

All the other vegetable productions of Egypt have been in a fluctuating ſtate from one year to another. We find them in Proſper Alpinus, and by his authority we ſeek for them in that country. In Egypt we find them no more; through neglect, they are rotten and gone, but we meet them flouriſhing in Nubia, Abyſſinia, and Arabia Felix, and theſe are the countries whence the curious firſt brought them, and from which, by ſome accident ſimilar to the firſt, they may again appear in Egypt.

PROSPER ALPINUS's work then, ſo far from being a collection of plants and trees of Egypt, may be ſaid to be a treatiſe of plants that are not in Egypt, but by accident; they are gleanings of natural hiſtory from Syria, Arabia, Nubia, Abyſſinia, Perſia, Malabar, and Indoſtan, of which, as far as I could diſcern or diſcover, ſeven ſpecies only remained when I was in Egypt, moſtly trees of ſuch a growth as to be out of the power of every thing but the ax.

THE plant that I ſhall now ſpeak of, the Papyrus, is a ſtrong proof of this, and is a remarkable inſtance of the violent changes theſe ſubjects have undergone in a few ages. It was at the firſt the repoſitory of learning and of record; it was the vehicle of knowledge from one nation to another; its uſes were ſo extended, that it came to be even the food of man, and yet we are now diſputing what this plant was, and what was its figure, and whether or not it is to be found in Egypt.

A GENTLEMAN * at the head of the literary world, who from his early years has dedicated himſelf to the ſtudy of the theory of this ſcience, and at a riper age has travelled through the world in the more agreeable purſuit of the practical part of it, hath aſſured me, that, unleſs from bad drawings, he never had an idea of what this plant was till I firſt gave him a very fine ſpecimen. The Count de Caylus ſays, that having heard there was a ſpecimen of this plant in Paris, he uſed his utmoſt endeavours to find it, but when brought to him, it appeared to be a cyperus of a very

* Sir Joſeph Banks.

a very common, well-known kind. With my own hands, not without ſome labour and riſk, I collected ſpecimens from Syria, from the river Jordan, from two different places in Upper and Lower Egypt, from the lakes Tzana and Gooderoo in Abyſſinia; and it was with the utmoſt pleaſure I found they were in every particular intrinſically the ſame, without any variation or difference, from what this plant has been deſcribed by the ancients; only I thought that thoſe of Egypt, the middle of the two extremes, were ſtronger, fairer, and fully a foot taller than thoſe in Syria and Abyſſinia.

OF

Papyrus

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OF PLANTS, SHRUBS, AND TREES.

PAPYRUS.

THE papyrus is a cyperus, called by the Greeks Biblus. There is no doubt but it was early known in Egypt, ſince we learn from Horus Apollo, the Egyptians, wiſhing to deſcribe the antiquity of their origin, figured a faggot, or bundle of papyrus, as an emblem of the food they firſt ſubſiſted on, when the uſe of wheat was not yet known in that country. But I ſhould rather apprehend that another plant, hereafter deſcribed, and not the papyrus, was what was ſubſtituted for wheat, for though the Egyptians ſucked the honey or ſweetneſs from the root of the papyrus, it does not appear that any part of this cyperus could be uſed for food, nor is it ſo at this day, though the Enſete, the plant to which I allude, might, without difficulty, have been uſed for bread in early ages before the diſcovery of wheat; in ſeveral provinces it holds its place at this day.

THE papyrus ſeems to me to have early come down from Ethiopia, and to have been uſed in Upper Egypt immediately after the diſuſe of hieroglyphics, and the firſt paper made

from this plant was in Seide. By Seide was anciently meant Upper Egypt, and it is ſo called to this day; and the Saitic, probably the oldeſt language known in Egypt after the Ethiopic, ſtill ſubſiſts, being written in the firſt character that ſucceeded the hieroglyphics in the valley or cultivated part of Egypt.

EARLY, however, as the papyrus was known, it does not appear to me to have ever been a plant that could have exiſted in, or, as authors have ſaid, been proper to the river Nile; its head is too heavy, and in a plain country the wind muſt have had too violent a hold of it. The ſtalk is ſmall and feeble, and withal too tall, the root too ſhort and ſlender to ſtay it againſt the violent preſſure of the wind and current, therefore I do conſtantly believe it never could be a plant growing in the river Nile itſelf, or in any very deep or rapid river.

PLINY *, who ſeems to have conſidered and known it perfectly in all its parts, does not pretend that it ever grew in the body of the Nile itſelf, but in the caliſhes or places where the Nile had overflowed and was ſtagnant, and where the water was not above two cubits high. This obſervation, I believe, holds good univerſally, at leaſt it did ſo wherever I have ſeen this plant, either in the overflowed ground in the Seide, or Upper Egypt, or in Abyſſinia, where it never grew in the bed of a river, but generally in ſome ſmall ſtream that iſſued out of, or into ſome large ſtagnant lake or abandoned water-courſe. It did not even truſt

* Plin. Nat. Hiſt. lib. xiii. cap. 11.

truſt itſelf to the weight of the wave of the deepeſt part of that lake when agitated by the wind, but it grew generally about the borders of it, as far as the depth of the water was within a yard.

PLINY ſays it grew likewiſe in Syria, and there I ſaw it firſt, before I went into Egypt; it was in the river Jordan, between the ſituation of the ancient city Paneas, which ſtill bears its name, and the lake of Tiberias, which is probably the lake Pliny alludes to, where he ſays it grew, and with it the calamus odoratus, one of the adventitious plants brought thither formerly by curious men (as I conjecture) which now exiſts no more, either in Syria or Egypt. It was on the left hand of the bridge called the Bridge of the Sons of Jacob. The river where it grew was two feet nine inches deep, and it was then increaſed with rain. It grew likewiſe, as Guilandinus * tells us, at the confluence of the Tigris and the Euphrates. I apprehend that it was not thus propagated into Aſia and Greece till the uſe of it, as manufactured into paper, was firſt known.

WHEN that was ſtill admits of ſome difficulty. Pliny ſays that Varro writes it came not into general uſe till after the conqueſt of Egypt by Alexander; yet it is plain from Anacreon †, Alcæus, Æſchylus, and the comic poets, that it was known in their time. Plato and Ariſtotle ſpeak of it alſo, ſo do Herodotus and Theophraſtus ‡. We alſo know it was of old in uſe among the Ionians, who probably brought it

* Melch. Guilandin. Philoſoph. and Medic. Lauſanne, Ann. 1576 8vo.

† Anac. Ode. iv. ‡ Theoph. Hiſt. plant. lib. iv. cap. 9.

in very early days directly from Egypt. Numa, too, who lived 300 years before Alexander, is ſaid to have left a number of books wrote on the papyrus, which a long time after his death were found at Rome.

All this might very well be; the writers of thoſe early ages were but few, and thoſe that then were, had all of them, more or leſs, connection by their learning with Egypt; it was to them only Egypt was known, and if they learned to write there, it was not improbable, that from thence too they adopted the materials moſt commodious for writing upon.

With Ariſtotle began the firſt arrangement of a library. Alexander's conqueſt, and the building of Alexandria, laid open Egypt, its trade and learning, to the world. Papyrus then, or the paper made from it, was the only materials made uſe of for writing upon. A violent deſire of amaſſing books, and a library, immediately followed, which we may ſafely attribute to the example ſet by Ariſtotle.

The Ptolemies, and the kings of Pergamus, contended who ſhould make the largeſt collection. The Ptolemies, maſters of Egypt and of the papyrus, availed themſelves of this monopoly to hinder the multiplication of books in Greece. The other princes probably ſmuggled this plant, and propagated it wherever it would grow out of Egypt. And Eumenes king of Pergamus ſet about bringing to perfection the manufacture of parchment, which, long before, the Ionians had uſed from the ſcarcity of paper; for whatever reſemblance there might be in names, or whatever may be inferred from them, writing upon ſkins or parchment was

much more ancient than any city or ſtate in Greece, and in uſe probably before Greece was inhabited. The Jews we know made uſe of it in the earlieſt ages. At this very time which we are now ſpeaking of, we learn from Joſephus *, that the elders, by order of the high prieſt, carried a copy of the law to Ptolemy Philadelphus in letters of gold upon ſkins, the pieces of which were ſo artfully put together that the joinings did not appear.

The ancients divided this plant into three parts, the head and the ſmall part of the ſtalk were cut off, then the woody part, or bottom, and the root connected with it, and there remained the middle. All theſe had ſeparate uſes. Pliny † ſays the upper part, which ſupported the large top itſelf, with the flowers upon it, was of no ſort of uſe but to adorn the temples, and crown the ſtatues of the gods; but it would ſeem that it was in uſe likewiſe for crowning men of merit. Plutarch § ſays, that Ageſilaus preferred being crowned with that to any other, on account of its ſimplicity, and that parting from the king he had ſought to be crowned with this as a favour, which was granted him. Athenæus ‖, on the contrary, laughed at thoſe that mixt roſes in the crown of papyrus, and he ſays it is as ridiculous as mixing roſes with a crown of garlic. The reaſon, however, he gives does not hold, for papyrus itſelf ſmells no more of mud, as he ſuppoſes, than a roſe-buſh; nay, the flower of the papyrus has ſomething agreeable in its ſmell, though not ſo much ſo as roſes. If he had ſaid that the head of the papyrus

* Joſeph. lib. xii. p. 405.

† Plin. Nat. Hiſt. lib. 13. cap. 11. § Plutarch in Ageſilao. ‖ Athen. lib. 15.

reſembled withered graſs or hay, and made a bad contraſt with the richneſs and beauty of the roſe, he had ſaid well. But notwithſtanding what Pliny has written, the head of the papyrus was employed, not only to make crowns for ſtatues of the gods, but alſo to make cables for ſhips. We are told that Antigonus made uſe of nothing elſe for ropes and cables to his fleets, before the uſe of ſpartum, or bent-graſs, was known, which, though very little better, ſtill ſerves that purpoſe in ſmall ſhips on the coaſt of Provence to this day. The top of the papyrus was likewiſe uſed for ſewing and caulking the veſſels, by forcing it into the ſeams, and afterwards covering it with pitch.

PLINY * tells us, that the whole plant together was uſed for making boats, a piece of the acacia-tree being put in the bottom to ſerve as the keel, to which plants were joined, being firſt ſewed together, then gathered up at ſtem and ſtern, and the ends of the plant tied faſt there, "Conſeritur bibula Memphitis cymba papyro;" and this is the only boat they ſtill have in Abyſſinia, which they call Tancoa, and from the uſe of theſe it is that Iſaiah deſcribes the nations, probably the Egyptians, upon whom the vengeance of God was ſpeedily to fall. I imagine alſo that the junks of the Red Sea, ſaid to be of leather, were firſt built with papyrus and covered with ſkins. In theſe the Homerites trafficked with their friends the Sabeans acroſs the mouth of the Red Sea, but they can never perſuade me, however generally and confidently it has been aſſerted, that veſſels of this kind could have lived an hour upon the Indian ocean.

THE

* Plin. Nat. Hiſt. lib. xiii. cap. 11.

The bottom, root, or woody part of this plant, was likewiſe of ſeveral uſes before it turned abſolutely hard; it was chewed in the manner of liquorice, having a conſiderable quantity of ſweet juice in it. This we learn from Dioſcorides; it was, I ſuppoſe, chewed, and the ſweetneſs ſucked out in the ſame manner as is done with ſugar-cane. This is ſtill practiſed in Abyſſinia, where they likewiſe chew the root of the Indian corn, and of every kind of cyperus; and Herodotus tells us, that about a cubit of the lower part of the ſtalk was cut off and roaſted over the fire, and eaten.

From the ſcarcity of wood, which was very great in Egypt for the reaſons I have already mentioned, this lower part was likewiſe uſed in making cups, moulds, and other neceſſary utenſils; we need not doubt too, one uſe of the woody part of this plant was to ſerve for what we call boards or covers for binding the leaves, which were made of the bark; we know that this was anciently one uſe of it, both from Alcæus and Anacreon.

In a large and very perfect manuſcript in my poſſeſſion, which was dug up at Thebes, the boards are of papyrus root, covered firſt with the coarſer pieces of the paper, and then with leather, in the ſame manner as it would be done now. It is a book one would call a ſmall folio, rather than by any other name, and I apprehend that the ſhape of the book where papyrus is employed was always of the ſame form with thoſe of the moderns. The letters are ſtrong, deep, black, and apparently written with a reed, as is practiſed by the Egyptians and Abyſſinians ſtill. It is written on both ſides, ſo never could be rolled up as parchment was, nor would the brittleneſs of the materials when dry, ſup-

port any ſuch frequent unrolling. This probably ariſes from their having firſt written upon papyrus, after the uſe of ſtone was laid aſide, and only adopted ſkins upon their embracing the Jewiſh religion. The Æthiopians, indeed, write upon parchment, yet uſe the ſame form of books as we do. The outer boards are made of wood and covered with leather. It was the law only they ſay they were in uſe to preſerve in one long roll of parchment, upon the foreſide of which it was written; it being indecent and improper to write any part of it on the back, or a leſs honourable place of the ſkin: And ſuch was the roll we have juſt mentioned as preſented to Ptolemy, where ſuch pains were taken in joining the ſeveral ſkins together, for this very reaſon.

The manner paper was made has been controverted; but whoever will read Pliny * attentively, cannot, as I imagine, be long in doubt. The thick part of the ſtalk being cut in half, the pellicle between the pith and the bark, or perhaps the two pellicles, were ſtript off, and divided by an iron inſtrument, which probably was ſharp-pointed, but did not cut at the edges. This was ſquared at the ſides ſo as to be like a ribband, then laid upon a ſmooth table or dreſſer, after being cut into the length that it was required the leaf ſhould be. Theſe ſtripes, or ribbands of papyrus, were lapped over each other by a very thin border, and then pieces of the ſame kind were laid tranſverſely, the length of theſe anſwering to the breadth of the firſt. The book which

* Plin. Nat. Hiſt. lib. xiii. cap. 12.

which I have is eleven inches and a half long, and ſeven inches broad, and there is not one leaf in it that has a rib-band of papyrus of two inches and a half broad, from which I imagine the ſize of this plant, formerly being fifteen feet long, was pretty near the truth. No ſuch plant, however, appears now; I do not remember to have ever ſeen one more than ten feet high. This is probably owing to their being allowed to grow wild, and too thick together, without being weeded; we know from Herodotus *, that the Egyptians cut theirs down yearly as they did their harveſt.

These ribbands, or ſtripes of papyrus, have twelve different names in Pliny †, which is to be copious with a vengeance. They are, philura, ramentum, ſcheda, cutis, plagula, corium, tænia, ſubtegmen, ſtatumen, pagina, tabula, and papyrus. After theſe, by whatever name you call them, were arranged at right angles to each other, a weight was placed upon them while moiſt, which compreſſed them, and ſo they were ſuffered to dry in the ſun.

It was ſuppoſed that the water of the Nile ‖ had a gummy quality neceſſary to glue theſe ſtripes together. This we may be aſſured is without foundation, no ſuch quality being found in the water of the Nile. On the contrary, I found it of all others the moſt improper, till it had ſettled, and was abſolutely diveſted of all the earth gathered in its turbid ſtate. I made ſeveral pieces of this paper, both in Abyſſinia

* Herodot. lib. xi. † Plin. Nat. Hiſt. lib. xiii. cap. 12. ‖ Plin. lib. xiii. cap. 12.

Abyſſinia and Egypt, and it appears to me, that the ſugar or ſweetneſs with which the whole juice of this plant is impregnated, is the matter that cauſes the adheſion of theſe ſtripes together, and that the uſe of the water is no more than to diſſolve this, and put it perfectly and equally in fuſion.

THERE ſeemed to be an advantage in putting the inſide of the pellicle in the ſituation that it was before divided, that is, the interior parts face to face, one long-ways, and one croſs-ways, after which a thin board of the cover of a book was laid firſt over it, and a heap of ſtones piled upon it. I do not think it ſucceeded with boiled water, and it was always coarſe and gritty with the water of the Nile. Some pieces were excellent, made with water that had ſettled, that is, in the ſtate in which we drink it; but even the beſt of it was always thick and heavy, drying very ſoon, then turning firm and rigid, and never white; nor did I ever find one piece that would bear the ſtrokes of a mallet *, but in its greeneſt ſtate the blow ſhivered and divided the fibres length-ways; nor did I ſee the marks of any ſtroke of a hammer or mallet in the book in my cuſtody, which is certainly on Saitic or Hieratic paper. I apprehend by a paſſage in Pliny †, that the mallet was uſed only when artificial

* Sir Joſeph Banks ſhewed me a ſlip of paper which he got from an Italian gentleman, made, if I remember, of a cyperus found in the river or lake of Thraſymene. I do not recollect the proceſs, but the paper itſelf was infinitely ſuperior to any I had ſeen attempted, and ſeemed to poſſeſs a great portion of flexibility, and was more likely to anſwer the purpoſes of paper than even the old Egyptian, if it had been dreſſed up and finiſhed.

† Plin. Nat. Hiſt. lib. xiii. cap. 13.

artificial glue or gum was made uſe of, which muſt have been as often as they let theſe ſtripes of the ribband or pellicle dry before arranging them.

PLINY * ſays, the books of Numa were 830 years old when they were found, and he wonders, from the brittleneſs of the inſide of the paper, it could have laſted ſo long. The manuſcript in my poſſeſſion, which was dug up at Thebes, I conjecture is near three times the age that Pliny mentions; and, though it is certainly fragil, has ſubſtance and preſervation of letter enough, with good care, to laſt as much longer, and be legible.

IF the Saitic paper was, as we imagine, the firſt invented, it ſhould follow, contrary to what Iſidore advances, that it was not firſt invented in Memphis, but in Upper Egypt in Seide, whoſe language and writing obtained in the earlieſt age, though Lucan ſeems to think with Iſidore,

Nondum flumineas Memphis contexere biblos
Noverat.——————

LUCAN, lib. iii.

AFTER the hieroglyphics were loſt, perhaps ſome time before, we know nothing the Egyptians adopted ſo generally as paper, and there were probably ‡ religious reaſons that impeded in thoſe early days the people from falling upon

* Plin. lib. xiii. cap. 13.

‡ Scruples about cleanneſs.

the moſt natural, the ſkins of beaſts. However this be, it is certain under the Egyptians, naturally averſe to novelty and improvement, paper arrived to no great perfection till taken in hands by the Romans. The Charta Claudia was thirteen inches wide, the Hieratica, or Saitica, eleven, and ſuch is the length of the leaf of my book in the Saitic dialect, that is, the old Coptic, or Egyptian of Upper Egypt. I have no idea what the Emporetic paper was, which obtained that degree of coarſeneſs and toughneſs, as to ſerve for ſhopkeepers uſes to tie up goods, unleſs it was like our brown paper employed to the ſame purpoſes.

If the date of the invention of this uſeful art of making paper is doubtful, the time when it was loſt, or ſuperſeded by one more convenient, is as uncertain. Euſtathius ſays it was diſuſed in his time in the 1170. Mabillon endeavours to prove it exiſted in the 9th, and even that there exiſted ſome Popiſh bulls wrote upon it as late as the 11th century. He gives, as inſtances, a part of St Mark's Goſpel preſerved at Venice as being upon papyrus, and the fragment of Joſephus at Milan to be cotton paper, while Maffei proves this to be juſt the reverſe, that of St Mark being cotton, and the other indiſputably he thinks to be Egyptian papyrus, ſo that Mabillon's authority as to the bulls of the pope may be fairly queſtioned.

The ſeveral times I have been at theſe places mentioned, I have never ſucceeded in ſeeing any of theſe pieces; that of St Mark at Venice I was aſſured had been recognized to be cotton paper; it was rendered not legible by the warm ſaliva of zealots kiſſing it from devotion, which I can eaſily comprehend muſt contain a very corroſive quality, and the Venetians

Venetians now refuſe to ſhew it more. I have ſeen two detached leaves of papyrus, but do not believe there is another book exiſting at the preſent time but that in my poſſeſſion, which is very perfect. I gave Dr Woide leave to tranſlate it at Lord North's deſire; it is a gnoſtic book, full of their dreams.

The general figure of this plant Pliny has rightly ſaid to reſemble a Thyrſus; the head is compoſed of a number of ſmall graſſy filaments, each about a foot long. About the middle, each of theſe filaments parts into four, and in the point, or partition, are four branches of flowers; the head of this is not unlike an ear of wheat in form, but which in fact is but a chaffy, ſilky, ſoft huſk. Theſe heads, or flowers, grow upon the ſtalk alternately, and are not oppoſite to, or on the ſame line with each other at the bottom.

Pliny* ſays it has no ſeed; but this we may be aſſured is an abſurdity. The form of the flower ſufficiently indicates that it was made to reſolve itſelf into the covering of one, which is certainly very ſmall, and by its exalted ſituation, and thickneſs of the head of the flower, ſeems to have needed the extraordinary covering it has had to protect it from the violent hold the wind muſt have had upon it. For the ſame reaſon, the bottom of the filaments compoſing the head are ſheathed in four concave leaves, which keep them cloſe together, and prevent injury from the wind getting in between them.

* Plin. lib. 13. ut. ſup.

The ſtalk is of a vivid green, thickeſt at the bottom, and tapering up to the top*; it is of a triangular form. In the Jordan, the ſingle ſide, or apex of the triangle, ſtood oppoſed to the ſtream as the cut-water of a boat or ſhip, or the ſharp angle of a buttreſs of a bridge, by which the preſſure of the ſtream upon the ſtalk would be greatly diminiſhed. I do not preciſely remember how it ſtood in the lakes in Ethiopia and Egypt, and only have this remark in the notes I made at the Jordan.

This conſtruction of the ſtalk of the papyrus ſeems to reproach Ariſtotle with want of obſervation. He ſays that no plant had either triangular or quadrangular ſtalks. Here we ſee an inſtance of the contrary in the papyrus, whoſe ſtalk is certainly and univerſally triangular; and we learn from Dioſcorides that many more have quadrangular ſtalks, or ſtems of four angles.

It has but one root, which is large and ſtrong †, Pliny ſays, as thick as a man's arm: So it was, probably, when the plant was fifteen feet high, but it is now diminiſhed in proportion, the whole length of the ſtalk, comprehending the head, being a little above ten, but the root is ſtill hard and ſolid near the heart, and works with the turning loom tolerably well, as it did formerly when they made cups of it. In the middle of this long root ariſes the ſtalk at right angles, ſo when inverted it has the figure of a T, and on each ſide of the large root there are ſmaller elaſtic ones, which are of a direction perpendicular to it, and which, like the ſtrings of a tent,

* Plin. lib. xiii. cap. 11. † Ibid. id.

a tent, ſteady it and fix it to the earth at the bottom. About two feet, or little more, of the lower part of the ſtalk is cloathed with long, hollow, ſword-ſhaped leaves, which cover each other like ſcales, and fortify the foot of the plant. They are of a duſky brown, or yellow colour. I ſuppoſe the ſtalk was cut off below, at about where theſe leaves end.

The drawing repreſents the papyrus as growing. The head is not upright, but is inclined, as from its ſize it always muſt be in hot countries, in which alone it grows. In all ſuch climates, there is ſome particular wind that reigns longer than others, and this being always the moſt violent, as well as the moſt conſtant, gives to heavy-headed trees, or plants, an inclination contrary to that from which it blows.

This plant is called el Berdi in Egypt, which ſignifies nothing in Arabic, and I ſuppoſe is old Egyptian. I have been told by a learned gentleman*, that in Syria it is known by the name of Babeer, which approaches more to the ſound of papyrus, and paper; this I never heard myſelf, but leave it entirely upon his authority.

BALESSAN,

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* Mr Adamſon, interpreter to the French factory of Seide, a man of great merit and knowledge in natural hiſtory, brother to the naturaliſt of that name, who has wrote the voyage to Senegal, and particularly an account of the ſhells of thoſe ſeas, full of barbarous words, and liberal ideas.

BALESSAN, BALM, or BALSAM.

THE great value ſet upon this drug in the eaſt remounts to very early ages; it is coeval with the India trade for pepper, and the beginning of it conſequently loſt in the darkneſs of the firſt ages. We know from ſcripture, the oldeſt hiſtory extant, as well as moſt infallible, that the Iſhmaelites, or Arabian carriers and merchants, trafficking with the India commodities into Egypt, brought with them balm as part of the cargo with pepper; but the price that they paid for Joſeph was ſilver, and not a barter with any of their articles of merchandiſe.

Strabo alone, of all the ancients, hath given us the true account of the place of its origin, "Near to this, that hiſtorian "ſays, is the moſt happy land of the Sabeans, and they are "a very great people. Among theſe, frankincenſe, myrrh, "and cinnamon grow, and in the coaſt that is about Saba "the balſam alſo." Among the myrrh-trees behind Azab

Baleſsan

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Balesan.

all along the coaſt to the Straits of Babelmandeb is its native country. It grows to a tree above fourteen feet high, ſpontaneouſly and without culture, like the myrrh, the coffee, and frankincenſe tree; they are all equally the wood of the country, and are occaſionally cut down and uſed for fuel. We need not doubt but that it was early tranſplanted into Arabia, that is, into the ſouth part of Arabia Felix, immediately fronting Azab, the place of its nativity. The high country of Arabia was too cold to receive it, being all mountainous; water freezes there.

THERE is an anecdote relating to Sir William Middleton, who was ſurpriſed and taken priſoner by the Turks in the firſt attempt to open the trade of the Red Sea, that when about to ſet * out for Sanaa, corruptly called Zenan, the reſidence of the Imam, or prince of Arabia Felix, he was by the people deſired † to take his fur cloak along with him to keep him from the cold; he thought they were ridiculing him upon what he had to ſuffer from the approaching heat, which he was convinced in the middle of Arabia muſt be exceſſive.

THE firſt plantation that ſucceeded ſeems to have been at Petra, the ancient metropolis of Arabia, now called Beder, or Beder Hunein, whence I got one of the ſpecimens from which the preſent drawing is made.

JOSEPHUS ‡, in the hiſtory of the antiquities of his country, ſays, that a tree of this balſam was brought to Jeruſalem by the

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* Dec. 22d, 1610. † Purchas, chap. xi. §. 3. ‡ Joſeph. Antiquit. lib. v.

the queen of Saba, and given, among other preſents, to Solomon, who, as we know from ſcripture, was very ſtudious of all ſort of plants, and ſkilful in the deſcription and diſtinction of them. Here it ſeems to have been cultivated and to have thriven, ſo that the place of its origin came to be forgotten.

NOTWITHSTANDING this poſitive authority of Joſephus, and the great probability that attends it, we are not to put it in competition with what we have been told from ſcripture, as we have juſt now ſeen, that the place where it grew, and was ſold to merchants, was Gilead in Judea, more than 1730 years before Chriſt, or 1000 before the queen of Saba; ſo that reading the verſe, nothing can be more plain than that it had been tranſplanted into Judea, flouriſhed, and had become an article of commerce in Gilead long before the period Joſephus mentions: "And they ſat down to eat bread, and "they lifted up their eyes and looked, and behold, a com-"pany of Iſhmaelites came from Gilead with their camels, "bearing ſpicery, and balm, and myrrh, going to carry it "down to Egypt*." Now, the ſpicery, or pepper, was certainly purchaſed by the Iſhmaelites at the mouth of the Red Sea, where was the market for Indian goods, and at the ſame place they muſt have bought the myrrh, for that neither grew nor grows any where elſe than in Saba or Azabo eaſt to Cape Gardefan, where were the ports for India, and whence it was diſperſed all over the world.

* Gen. chap. xxxvii. ver. 25.

THE Iſhmaelites, or Arabian carriers, loaded their camels at the mouth of the Red Sea with pepper and myrrh. For reaſons not now known to us, they went and completed their cargo with balſam at Gilead, ſo that, contrary to the authority of Joſephus, nothing is more certain, than 1730 years before Chriſt, and 1000 years before the queen of Saba came to Jeruſalem, the balſam-tree had been tranſplanted from Abyſſinia into Judea, and become an article of commerce there, and the place from which it originally was brought, through length of time, combined with other reaſons, came to be forgotten.

THEOPHRASTUS, Dioſcorides, Pliny, Solinus, and Serapion, all ſay that this balſam came only from Judea. The words of Pliny are, "But to all other odours whatever, the balſam "is preferred, produced in no other part but the land of "Judea, and even there in two gardens only; both of "them belonging to the king, one no more than twen-"ty acres, the other ſtill ſmaller *."

AT this time I ſuppoſe it got its name of Balſamum Judaicum, or, Balm of Gilead, and thence became an article in merchandiſe and fiſcal revenue, which probably occaſioned the diſcouragement of bringing it any more from Arabia, whence it very probably was prohibited as contraband. We ſhall ſuppoſe thirty acres planted with this tree would have produced more than all the trees in Arabia do at this day. Nor does the plantation of Beder Hunein

* Plin. Nat. Hiſt. lib. xii. cap. 25.

amount to much more than that quantity, for we are ſtill to obſerve, that even when it had been as it were naturaliſed in Judea, and acquired a name in the country, ſtill it bore evident marks of its being a ſtranger there; and its being confined to two royal gardens alone, ſhews it was maintained there by force and culture, and was by no means a native of the country. And this is confirmed by Strabo, who ſpeaks of it being in the king's palace or garden at Jericho. This place being one of the warmeſt in Judea, ſhews likewiſe their apprehenſions about it, ſo that in Judea, we may imagine it was pretty much in the ſtate of our myrtles in England, which, though cultivated in green-houſes in all the reſt of the iſland, yet grow beautifully and luxuriantly in Devonſhire and Cornwall, the weſtern parts of it.

Diodorus Siculus ſays, it grew in a valley in Arabia Felix; he ſhould have ſaid on a number of gentle, ſloping hills in Arabia Deſerta, which have a very ſmall degree of elevation above the plain, but by no means reſemble a valley. This place was the ſcene of three bloody battles between Mahomet and his kinſmen the Beni Koreiſh, who refuſed to be converts to his religion, or acknowledge his divine legation. Theſe are at large deſcribed by ſeveral of the hiſtorians of that nation, with circumſtances and anecdotes, as well intereſting and entertaining, as elegantly told. They ſhew plainly that Mahomet's tribe, the Beni Koreiſh, did not receive their fanatical manners and diſpoſition from Mahomet and his religion, but were juſt as obſtinate, ignorant, and ſanguinary when they were Pagans, as they were afterwards when converted and became Mahometans. The laſt of theſe battles, which was deciſive in Mahomet's favour, gave him the ſovereignty of Mecca, and was attended with the extirpation of ſome of the principal families in this tribe.

At

At this time the balſam is ſuppoſed, by being ſold in Judea, and not acceſſible by reaſon of the commotions in Arabia, to have become almoſt forgotten in that laſt part, where the trade from Abyſſinia, its native country, was likewiſe interrupted by this innovation of religion, and by Mahomet's profanation of the Caaba, or temple of the ſun, the ancient reſort of the Sabean merchants carrying on the trade of India. This interval the impoſtor thought proper for a pretended miracle; he ſaid, that, from the blood of the Beni Koreiſh ſlain, there had ſprung up this grove of trees, from the juice of which all the true believers on his ſide received a cure for their wounds, however fatal they appeared, nay, ſome of them were revived from even death itſelf. Since that time it has maintained its reputation equal to that which it had in antiquity.

Prosper Alpinus ſays, that one Meſſoner a eunuch, governor of Cairo in the year 1519, cauſed bring from Arabia forty plants, which he placed in the garden of Mattareah, where he ſuperintended them. Every day he went to that garden to pay his devotions to the Virgin Mary. It was many times renewed, and has as often periſhed ſince. Bellonius ſays, that in his time there were ten plants at Mattareah, and he is of opinion, that in all ages they grew well in Arabia, which is not true, for thoſe at Beder are conſtantly ſupplied with new plants ſo ſoon as the old ones decay. There was none exiſting at Mattareah the two ſeveral times I viſited Cairo, but there were ſome of the Chriſtians ſtill living there that remembered one plant in that garden.

THERE were three productions from this tree very much eſteemed among the ancients. The firſt was called Opobalſamum, or, Juice of the Balſam, which was the fineſt kind, compoſed of that greeniſh liquor found in the kernel of the fruit: The next was Carpobalſamum, made by the expreſſion of the fruit when in maturity. The third was Xylobalſamum, the worſt of all, it was an expreſſion or decoction of the ſmall new twigs of a reddiſh colour. Theſe twigs are ſtill gathered in little faggots and ſent to Venice, where I am told they are an ingredient in the Theriac, or of ſome ſort of compound drug made in the laboratories there: But the principal quantity of balſam in all times was produced by inciſion, as it is at this day. Concerning this, too, many fables have been invented and propagated.

TACITUS ſays, that this tree was ſo averſe to iron that it trembled upon a knife being laid near it, and ſome pretend the inciſion ſhould be made by ivory, glaſs, or ſtone. There is no doubt but the more attention there is given to it, and the cleaner the wound is made, the better this balſam will be. It is now, as it probably ever has been, cut by an ax, when the juice is in its ſtrongeſt circulation in July, Auguſt, and beginning of September. It is then received into a ſmall earthen bottle, and every day's produce gathered and poured into a larger, which is kept cloſely corked. The Arabs Harb, a noble family of Beni Koreiſh, are the proprietors of it, and of Beder, where it grows. It is a ſtation of the Emir Hadje, or pilgrims going to Mecca, half way between that city and Medina.

SOME books ſpeak of a white ſort brought by the caravans from Mecca, and called Balſam of Mecca, and others

a balſam called that of Judea, but all theſe are counterfeits or adulterations. The balſam of Judea, which I have already mentioned, was long ago loſt, when the troubles of that country withdrew the royal attention from it; but, as late as Galen's time, it not only exiſted, but was growing in many places of Paleſtine beſides Jericho, and there is no doubt but it is now totally loſt there.

When Sultan Selim made the conqueſt of Egypt and Arabia in the 1516, three pound was then the tribute ordered to be ſent to Conſtantinople yearly, and this proportion is kept up to this day. One pound is due to the governor of Cairo, one pound to the Emir Hadje who conducts the pilgrims to Mecca, half a pound to the baſha of Damaſcus, and ſeveral ſmaller quantities to other officers, after which, the remainder is ſold or farmed out to ſome merchants, who, to increaſe the quantity, adulterate it with oil of olives and wax, and ſeveral other mixtures, conſulting only the agreement of colour, without conſidering the aptitude in mixing; formerly we were told it was done with art, but nothing is eaſier detected than this fraud now.

It does not appear to me, that the ancients had ever ſeen this plant, they deſcribe it ſo variouſly; ſome will have it a tree, ſome a ſhrub, and ſome a plant only; and Proſper Alpinus, a modern, corroborates the errors of the ancients, by ſaying it is a kind of vine, (viticoſus). The figure he has given of it is a very bad one, and leaves us entirely in doubt in what claſs to place it. The defect of the plant in Judea and in Egypt, and the contradiction in the deſcription of the ancients as to its figure and reſemblance, occaſioned

a doubt

a doubt that the whole plants in theſe two countries, and Arabia alſo, had been loſt in the deſolation occaſioned by the Mahometan conqueſt; and a warm diſpute aroſe between the Venetians and Romans, whether the drug uſed by the former in the Theriac was really and truly the old genuine opobalſamum? The matter was referred to the pope, who directed proper inquiry to be made in Egypt, which turned out entirely in favour of the Venetians, and the opobalſamum continuing as formerly.

A very learned and tedious treatiſe was publiſhed by Veſlingius, in the year 1643, at Padua, where this affair was diſcuſſed at full length. As both parties of the diſputants ſeem to argue concerning what it is from the miſunderſtood reports of what it was, I ſhall content myſelf briefly with ſtating what the qualities of the opobalſamum are, without taking pains to refute the opinions of thoſe that have reported what the opobalſamum is not.

The opobalſamum, or juice flowing from the balſam-tree, at firſt when it is received into the bottle or vaſe from the wound from whence it iſſues, is of a light, yellow colour, apparently turbid, in which there is a whitiſh caſt, which I apprehend are the globules of air that pervade the whole of it in its firſt ſtate of fermentation; it then appears very light upon ſhaking. As it ſettles and cools it turns clear, and loſes that milkineſs which it firſt had when flowing from the tree into the bottle. It then has the colour of honey, and appears more fixed and heavy than at firſt. After being kept for years, it grows a much deeper yellow, and of the colour of gold. I have ſome of it, which, as I have already mentioned in my travels, I got from the

Cadi of Medina in the 1768; it is now ſtill deeper in colour, full as much ſo as the yelloweſt honey. It is perfectly fluid, and has loſt very little either of its taſte, ſmell, or weight. The ſmell at firſt is violent and ſtrongly pungent, giving a ſenſation to the brain like to that of volatile ſalts when raſhly drawn up by an incautious perſon. This laſts in proportion to its freſhneſs, for being neglected, and the bottle uncorked, it quickly loſes this quality, as it probably will at laſt by age, whatever care is taken of it.

In its pure and freſh ſtate it diſſolves eaſily in water. If dropt on a woollen cloth, it will waſh out eaſily, and leaves no ſtain. It is of an acrid, rough, pungent taſte, is uſed by the Arabs in all complaints of the ſtomach and bowels, is reckoned a powerful antiſeptic, and of uſe in preventing any infection of the plague. Theſe qualities it now enjoys, in all probability, in common with the various balſams we have received from the new world, ſuch as the balſam of Tolu, of Peru, and the reſt; but it is always uſed, and in particular eſteemed by the ladies, as a coſmetic: As ſuch it has kept up its reputation in the eaſt to this very day. The manner of applying it is this; you firſt go into the tepid bath till the pores are ſufficiently opened, you then anoint yourſelf with a ſmall quantity, and, as much as the veſſels will abſorb; never-fading youth and beauty are ſaid to be the conſequences of this. The purchaſe is eaſy enough. I do not hear that it ever has been thought reſtorative after the loſs of either.

The figure I have here given of the balſam may be depended upon, as being carefully drawn, after an exact examination

amination, from two very fine trees brought from Beder Hunein; the firſt by the Cadi of Medina at Yambo; the ſecond at Jidda, by order of Youſef Kabil, vizir or miniſter to the ſherriffe of Mecca. The firſt was ſo deliberately executed, that the ſecond ſeemed of no ſervice but to confirm me in the exactitude of the firſt. The tree was 5 feet 2 inches high from where the red root begins, or which was buried in the earth, to where it divides itſelf firſt into branches. The trunk at thickeſt was about 5 inches diameter, the wood light and open, and incapable of poliſhing, covered with a ſmooth bark of bluiſh-white, like to a ſtandard cherry-tree in good health, which has not above half that diameter; indeed a part of the bark is a reddiſh brown; it flattens at top like trees that are expoſed to ſnow-blaſts or ſea air, which gives it a ſtunted appearance. It is remarkable for a penury of leaves. The flowers are like that of the acacia-tree, white and round, only that three hang upon three filaments, or ſtalks, where the acacia has but one. Two of theſe flowers fall off and leave a ſingle fruit; the branches that bear this are the ſhoots of the preſent year; they are of a reddiſh colour, and tougher than the old wood: it is theſe that are cut off and put into little faggots, and ſent to Venice for the Theriac, when bruiſed or drawn by fire, and formerly theſe made the Xylobalſamum.

Concerning the vipers which, Pliny ſays, were frequent among the balſam trees I made very particular inquiry; ſeveral were brought me alive, both to Yambo and Jidda. Of theſe I ſhall ſpeak in another place, when I give the figure, and an account of that animal ſo found.

SASSA

SASSA, MYRRH, AND OPOCALPASUM.

AT the time when I was on the borders of the Tal-Tal, or Troglodyte country, I ſought to procure myſelf branches and bark of the myrrh-tree, enough preſerved to be able to deſcribe it and make a deſign; but the length and ruggedneſs of the way, the heat of the weather, and the careleſſneſs and want of reſources of naked ſavages always diſappointed me. In thoſe goat-ſkin bags into which I had often ordered them to put ſmall branches, I always found the leaves moſtly in powder; ſome few that were entire ſeemed to reſemble much the acacia vera, but were wider towards the extremity, and more pointed immediately at the end. In what order the leaves grew I never could determine. The bark was abſolutely like that of the acacia vera; and among the leaves I often met with a ſmall, ſtraight, weak thorn, about two inches long.

THESE were all the circumſtances I could combine relative to the myrrh-tree, too vague and uncertain to riſk a drawing upon, when there ſtill remained ſo many deſiderata concerning it; and as the king was obſtinate not to let me

go thither after what had happened to the ſurgeon's mate and boat's crew of the Elgin Indiaman *, I was obliged to abandon the drawing of the myrrh-tree to ſome more fortunate traveller, after having in vain attempted to procure it at Azab, as I have already mentioned.

At the ſame time that I was taking theſe pains about the myrrh, I had deſired the ſavages to bring me all the gums they could find, with the branches and bark of the trees that produced them. They brought me at different times ſome very fine pieces of incenſe, and at another time a very ſmall quantity of a bright colourleſs gum, ſweeter on burning than incenſe, but no branches of either tree, though I found this latter afterwards in another part of Abyſſinia. But at all times they procured me quantities of gum of an even and cloſe grain, and of a dark brown colour, which was produced by a tree called Saſſa, and twice I received branches of this tree in tolerable order, and of theſe I made a drawing.

Some weeks after, while walking at Emfras, a Mahometan village, whoſe inhabitants are myrrh merchants, I ſaw a large tree with the whole upper part of the trunk, and the large branches, ſo covered with boſſes and knobs of gum, as to appear monſtrouſly deformed, and inquiring farther about this tree, I found that it had been brought, many years before, from the myrrh country, by merchants, and planted there for the ſake of its gum, with which theſe Mahometans ſtiffened the blue Surat cloths they got damaged from Mocha, to trade in with the Galla and Abyſſinians. Neither the

* They were murdered at Azab, ſee vol. I. p. 319.

Sassa

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Saſsa

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the origin of the tree which they called Saſſa, nor the gum, could allow me to doubt a moment that it was the ſame as what had been brought to me from the myrrh country, but I had the additional ſatisfaction to find the tree all covered over with beautiful crimſon flowers of a very extraordinary and ſtrange conſtruction. I began then a drawing anew, with all that ſatisfaction known only to thoſe who have been converſant in ſuch diſcoveries.

I took pieces of the gum with me; it is very light. Galen complains that, in his time, the myrrh was often mixed with a drug which he calls Opocalpaſum, by a Greek name, but what the drug was is totally unknown to us at this day, as nothing ſimilar to the Greek name is found in the language of the country. But as the only view of the ſavage, in mixing another gum with his myrrh, muſt have been to increaſe the quantity, and as the great plenty in which this gum is produced, and its colour, make it very proper for this uſe, and above all, as there is no reaſon to think there is another gum-bearing tree of equal qualities in the country where the myrrh grows, it ſeems to me next to a proof, that this muſt have been the opocalpaſum of Galen.

I must however confeſs, that Galen ſays the opocalpaſum was ſo far from being an innocent drug, that it was a mortal poiſon, and had produced very fatal effects. But as thoſe Troglodytes, though now more ignorant than formerly, are ſtill well acquainted with the properties of their herbs and trees, it is not poſſible that the ſavage, deſiring to increaſe his ſales, would mix them

with a poiſon that muſt needs diminiſh them. And we may therefore without ſcruple ſuppoſe that Galen was miſtaken in the quality aſcribed to this drug, and that he might have imagined, from tenderneſs to the profeſſion, that people died of the opocalpaſum who perhaps really died of the phyſician: Firſt, Becauſe we know of no gum or reſin that is a mortal poiſon: Secondly, Becauſe, from the conſtruction of its parts, gum could not have the activity which violent poiſon has; and conſidering the ſmall quantities in which myrrh is taken, and the opocalpaſum could have been but in an inconſiderable proportion to the myrrh, to have killed, it muſt have been a very active poiſon indeed: Thirdly, theſe accidents from a known cauſe muſt have brought myrrh into diſuſe, as certainly as the Spaniards mixing arſenic with bark would baniſh that drug when we ſaw people die of it. Now this never was the caſe, it maintained its character among the Greeks and the Arabs, and ſo down to our days; and a modern phyſician, Van Helmont, thinks it might make man immortal if it could be rendered perfectly ſoluble in the human body. Galen then was miſtaken as to the poiſonous quality of the opocalpaſum. The Greek phyſician knew little of the Natural Hiſtory of Arabia, leſs ſtill of that of Abyſſinia, and we who have followed them know nothing of either.

This gum being put into water, ſwells and turns white, and loſes all its glue; it very much reſembles gum adragant in quality, and may be eaten ſafely. This ſpecimen came from the Troglodyte country in the year 1771. The Saſſa, the tree which produces the opocalpaſum, does not grow in Arabia. Arabian myrrh is eaſily known from Abyſſinian

ſinian by the following method; Take a handful of the ſmalleſt pieces found at the bottom of the baſket where the myrrh was packed, and throw them into a plate, and juſt cover them with water a little warm, the myrrh will remain for ſome time without viſible alteration, for it diſſolves ſlowly, but the gum will ſwell to five times its original ſize, and appear ſo many white ſpots amidſt the myrrh.

EMFRAS, as I have ſaid, is a large village ſomething more than twenty miles ſouth from Gondar, ſituated upon the face of a hill of conſiderable height above the lake Tzana, of which, and all its iſlands, it has a very diſtinct and pleaſant view; it is divided from the lake by a large plain, near which is the iſland of Mitraha, one of the burying-places of the kings. The inhabitants of the lower town, cloſe on the banks of the ſmall river Arno, are all Mahometans, many of them men of ſubſtance, part of them the king's tent-makers, who follow the camp, and pitch his tents in the field; the others are merchants to the myrrh and frankincenſe country, that is, from the eaſt parallel of the kingdom of Dancali to the point Cape Gardefan, or Promontorium Aromatum; they alſo bring ſalt from the plains, on the weſt of the kingdom of Dancali, where foſſile ſalt is dug; it is on the S. E. border of the kingdom of Tigré. Theſe Mahometans trade alſo to the Galla, to the weſtward of the Nile; their principal commodity is myrrh and damaged cargoes of blue Surat cloth, which they unfold and clean, then ſtiffen them with gum, and fold them in form of a book as when they were new.

THIS gum, which is called Saſſa, they at firſt brought from the myrrh country behind Azab, till ingenious and

ſagacious people had carried plants of the tree to their different villages, where they have it growing in great perfection, and more than ſupply the uſes of the merchants.

This tree grows to a great height, not inferior to that of an Engliſh elm; that from which this draught was made was about two feet diameter; the gum grows on all ſides of the trunk, in quantity enough almoſt to cover it, in form of large globes, and ſo it does on all the principal branches. Theſe lumps are ſometimes ſo large as to weigh two pound, though naturally very light.

The bark of the tree is thin and of a bluiſh colour, not unlike that of a cherry-tree when young, or rather whiter. The wood is white and hard, only the young branches which carry the flower are red. The leaves are joined to the ſides of the ſmall branches by a ſmall pedicle of conſiderable ſtrength, the leaves are two and two, or oppoſite to each other, and have no ſingle leaf at the point; they are ſtrongly varniſhed both on one ſide and the other, the back rather lighter than the foreſide of the leaf. The branches that carry the leaves have about an inch of the ſtalk bare, where it is fixed to the larger branch. There are generally fourteen leaves, each of about three quarters of an inch long. At the top of the branch are knots out of which come three ſmall ſtalks, bare for about an inch and a half, then having a number of ſmall tubes, which, when they open at the top, put forth a long piſtil from the bottom of the tube. The top of the tube, divided into five ſegments, or petals, arrives about one third up the piſtil, and makes the figure of a calix or perianthium to it. From this tube proceeds a great number of very ſmall capillaments of a

pink colour, at the end of each of which hangs a purple ſtigma. At the top of this piſtil is a large bunch of ſtill finer fibres, or capillaments, with ſtigmata likewiſe, and at the end the piſtil is rounded as if forming a fruit; without a very diſtinct drawing, it would be difficult to make a deſcription that ſhould be intelligible.

NOTHING can be more beautiful, or more compounded, than the formation of this flower, though it has no odour; the head is compoſed of about thirty of theſe ſmall branches now deſcribed, which make a very beautiful maſs, and is of a pink colour of different ſhades. At ſun-ſet, the leaves on each ſide of the branch ſhut face to face like the ſenſitive tribe. I never ſaw any ſeed or fruit that it bore, nor any thing like the rudiments of ſeed, unleſs it be that very ſmall rotundity that appears at the end of the piſtil, which ſeem to bear no proportion to ſo large a tree.

ERGETT

ERGETT Y'DIMMO.

THE two beautiful ſhrubs which I have here given to the reader are called by the name of Ergett, which we may ſuppoſe, in Abyſſinian botany, to be the generic name of the mimoſa, as both of theſe have the ſame name, and both of the ſame family, of which there are many varieties in Abyſſinia.

THIS firſt is called the Bloody Ergett, as we may ſuppoſe from the pink filaments of which this beautiful and uncommon flower is in part compoſed, and which we may therefore call Mimoſa Sanguinea. The upper part of the flower is compoſed of curled, yellow filaments, and the bottom a pink of the ſame ſtructure. I never ſaw it in any other ſtate. Before the bloſſoms ſpread it appears in the form here exhibited. The pink, or lower part, in its unripe ſtate, is compoſed of green tubercules, larger and more detached than where the yellow flower is produced, whoſe tubercules are ſmaller and cloſer ſet together. I need not ſay the leaves

Ergett Dimmo.

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Ergett el Krone

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leaves are of the double pinnated kind, as that and every thing elſe material can be learned from the figure, full as perfectly as if the flower was before them; none of the parts, however trifling and ſmall, being neglected in the repreſentation, and none of them ſuppoſed or placed there out of order, for ornament, or any other cauſe whatever: a rule which I would have the reader be perſuaded is invariably obſerved in every article repreſented in this collection, whether tree or plant, beaſt, bird, or fiſh.

ERGETT EL KRONE.

THE next of this ſpecies of Ergett or Mimoſa, is called in Abyſſinia Ergett el Krone, or the Horned Ergett; I apprehend the figure of the pods have given it that appellation. Its flower in ſize and form very much reſembles the acacia vera, only that it is attached to the branch by a long and ſtrong woody ſtalk, which grows out at the bottom of the branch bearing the leaves, and is ſheltered as in a caſe by the lower part of it. The branches of it are all covered with very ſhort, ſtrong, ſharp-pointed thorns,

whoſe point is inclined backward towards the root. Its pods are covered with a prickly kind of hair, which, when touched, ſtick in your fingers and give very uneaſy ſenſations. The pods are divided into thirteen diviſions, in each of which are three round ſeeds, hard and ſhining, of a duſky brownish colour. The flower has ſcarcely any ſmell, nor do I know that it is of any utility whatever. Both theſe beautiful ſhrubs were found upon the banks of the river Arno, between Emfras and the lake Tzana. The ſoil is black mould, with a great mixture or compoſition of rotten putrified leaves, thinly covering the rock in the temperate part of Abyſſinia. What I have to obſerve of both theſe ſhrubs is, that they ſhut their leaves upon the violent rains of winter, and are never fully expanded till the ſun and fair ſeaſon again return.

ENSETE.

THE Enſete is an herbacious plant. It is ſaid to be a native of Narea, and to grow in the great ſwamps and marſhes in that country, formed by many rivers riſing there,

Ensete

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Ensete

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which have little level to run to either ocean. It is ſaid that the Galla, when tranſplanted into Abyſſinia, brought for their particular uſe the coffee-tree, and the Enſete, the uſe of neither of which were before known. However, the general opinion is, that both are naturally produced in every part of Abyſſinia, provided there is heat and moiſture. It grows and comes to great perfection at Gondar, but it moſt abounds in that part of Maitſha and Goutto weſt of the Nile, where there are large plantations of it, and is there almoſt, excluſive of any thing elſe, the food of the Galla inhabiting that province; Maitſha is nearly upon a dead level, and the rains have not ſlope to get off eaſily, but ſtagnate and prevent the ſowing of grain. Vegetable food would therefore be very ſcarce in Maitſha, were it not for this plant.

Some who have ſeen my drawing of this plant, and at the ſame time found the banana in many parts of the eaſt, have thought the Enſete to be a ſpecies of the Muſa. This however, I imagine, is without any ſort of reaſon. It is true, the leaf of the banana reſembles that of the Enſete, it bears figs, and has an excreſcence from its trunk, which is terminated by a conical figure, chiefly differing from the Enſete in ſize and quantity of parts, but the figs of the banana are in ſhape of a cucumber, and this is the part which is eaten. This fig is ſweet though mealy, and of a taſte highly agreeable. It is ſuppoſed to have no ſeeds, though in fact there are four ſmall black ſeeds in every fig belonging to it. But the figs of the Enſete are not eatable; they are of a tender, ſoft ſubſtance; watery, taſteleſs, and in colour and conſiſtence ſimilar to a rotten apricot; they are of a conical form, crooked a little at the lower end, about an inch and a half in length, and an inch in breadth where

thickeſt. In the inſide of theſe is a large ſtone half an inch long, of the ſhape of a bean or cuſhoo-nut, of a dark brown colour, and this contains a ſmall ſeed, which is ſeldom hardened into fruit, but conſiſts only of ſkin.

The long ſtalk that bears the figs of the Enſete ſprings from the center of the plant, or rather is the body or ſolid part of the plant itſelf. Upon this, where it begins to bend, are a parcel of looſe leaves, then grows the fig upon the body of the plant without any ſtalk, after which the top of the ſtalk is thick-ſet with ſmall leaves, in the midſt of which it terminates the flower in form of the artichoke; whereas in the banana, the flower, in form of the artichoke, grows at the end of that ſhoot, or ſtalk, which proceeds from the middle of the plant, the upper part of which bears the row of figs.

The leaves of the Enſete are a web of longitudinal fibres cloſely ſet together; the leaves grow from the bottom, and are without ſtalks; whereas the banana is in ſhape like a tree, and has been miſtaken for ſuch. One half of it is divided into a ſtem, the other is a head formed of leaves, and, in place of the ſtem that grows out of the Enſete, a number of leaves rolled together round like a truncheon, ſhoots out of the heart of the banana, and renews the upper as the under leaves fall off; but all the leaves of the banana have a long ſtalk; this fixes them to the trunk, which they do not embrace by a broad baſe, or involucrum, as the Enſete does.

But the greateſt differences are ſtill remaining. The banana, has, by ſome, been miſtaken for a tree of the

palmaceous tribe, for no other reaſon but a kind of ſimilarity in producing the fruit on an excreſcence or ſtalk growing from the heart of the ſtem; but ſtill the muſa is neither woody nor perennial; it bears fruit but once, and in all theſe reſpects it differs from trees of the palmaceous kind, and indeed from all ſort of trees whatever. The Enſete, on the contrary, has no naked ſtem, no part of it is woody; the body of it, for ſeveral feet high, is eſculent; but no part of the banana can be eaten. As ſoon as the ſtalk of the Enſete appears perfect and full of leaves, the body of the plant turns hard and fibrous, and is no longer eatable; before, it is the beſt of all vegetables; when boiled, it has the taſte of the beſt new wheat-bread not perfectly baked.

The drawing which I have given the reader was of an Enſete ten years old. It was then very beautiful, and had no marks of decay. As for the piſtil, ſtamina, and ovarium, they are drawn with ſuch attention, and ſo clearly expreſſed by the pencil, that it would be loſt time to ſay more about them. I have given one figure of the plant cloathed with leaves, and another of the ſtem ſtript of them, that the curious may have an opportunity of further inveſtigating the difference between this and the muſa.

When you make uſe of the Enſete for eating, you cut it immediately above the ſmall detached roots, and perhaps a foot or two higher, as the plant is of age. You ſtrip the green from the upper part till it becomes white; when ſoft, like a turnip well boiled, if eat with milk or butter it is the beſt of all food, wholeſome, nouriſhing, and eaſily digeſted.

We ſee in ſome of the Egyptian antique ſtatues the figure of Iſis ſitting between ſome branches of the banana tree, as it is ſuppoſed, and ſome handfuls of ears of wheat; you ſee likewiſe the hippopotamus ravaging a quantity of banana tree. Yet the banana is merely adventitious in Egypt, it is a native of Syria; it does not even exiſt in the low hot country of Arabia Felix, but chooſes ſome elevation in the mountains where the air is temperate, and is not found in Syria farther to the ſouthward than lat 34°.

After all, I do not doubt that it might have grown in Mattareah, or in the gardens of Egypt or Roſetto; but it is not a plant of the country, and could never have entered into the liſt of their hieroglyphics; for this reaſon, it could not figure any thing permanent or regular in the hiſtory of Egypt or its climate. I therefore imagine that this hieroglyphic was wholly Ethiopian, and that the ſuppoſed banana, which, as an adventitious plant, ſignified nothing in Egypt, was only a repreſentation of the Enſete, and that the record in the hieroglyphic of Iſis and the Enſete-tree was ſomething that happened between harveſt, which was about Auguſt, and the time the Enſete-tree became to be in uſe, which is in October.

The hippopotamus is generally thought to repreſent a Nile that has been ſo abundant as to be deſtructive. When therefore we ſee upon the obeliſks the hippopotamus deſtroying the banana, we may ſuppoſe it meant that the extraordinary inundation had gone ſo far as not only to deſtroy the wheat, but alſo to retard or hurt the growth of the Enſete, which was to ſupply its place. I do likewiſe conjecture,

Kol-quall.

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ture, that the bundle of branches of a plant which Horus Apollo ſays the ancient Egyptians produced as the food on which they lived before the diſcovery of wheat, was not the papyrus, as he imagines, but this plant, the Enſete, which retired to its native Ethiopia upon a ſubſtitute being found better adapted to the climate of Egypt.

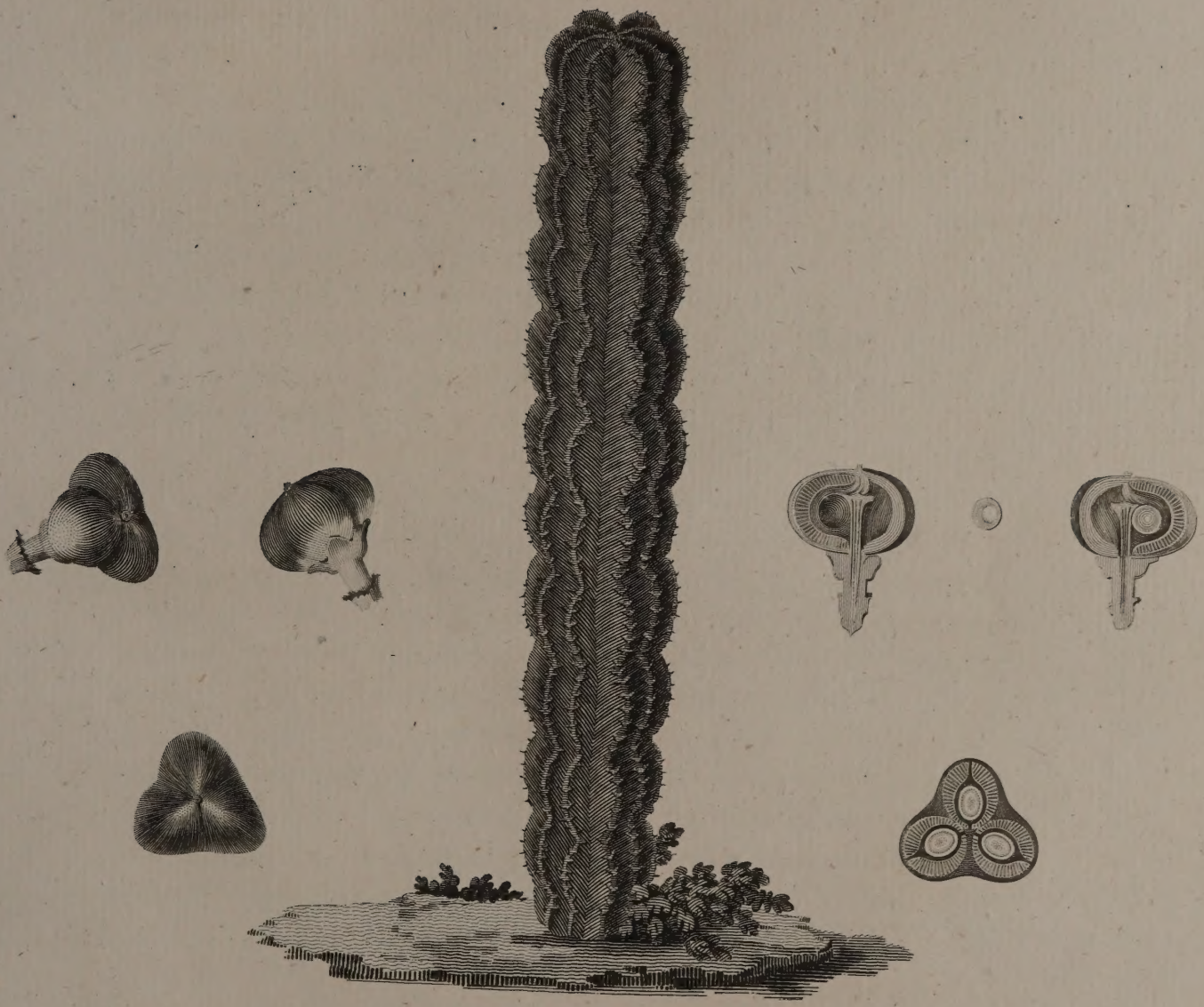
KOL-QUALL.

IN that memorable day when leaving the Samhar, or low flat parched country which forms the ſea-coaſt of Abyſſinia, and turning weſtward, we came to the foot of that ſtupendous mountain Taranta, which we were to paſs in order to enter into the high land of Abyſſinia, we ſaw the whole ſide of that prodigious mountain covered from top to bottom with this beautiful tree. We were entering a country where we daily expected wonders, and therefore, perhaps, were not ſo much ſurpriſed as might have been ſuppoſed at ſo extraordinary a ſight. The fruit was ripe, and being carried on the top of the branches, the trees that ſtood thick together

together appeared to be covered with a cloth or veil of the moſt vivid crimſon colour.

The firſt thing that preſented itſelf was the firſt ſhoot of this extraordinary tree. It was a ſingle ſtalk, about ſix inches meaſured acroſs, in eight diviſions, regularly and beautifully ſcolloped and rounded at the top, joining in the centre at three feet and a half high. Upon the outſide of theſe ſcollops were a ſort of eyes or ſmall knots, out of every one of which came five thorns, four on the ſides and one in the centre, ſcarce half an inch long, fragil, and of no reſiſtance, but exceedingly ſharp and pointed. Its next proceſs is to put out a branch from the firſt or ſecond ſcollop near the top, others ſucceed from all directions; and this ſtalk, which is ſoft and ſucculent, of the conſiſtence of the aloe, turns by degrees hard and ligneous, and, after a few years, by multiplying its branches, aſſumes the form as in the ſecond plate. It is then a tree, the lower part of which is wood, the upper part, which is ſucculent, has no leaves; theſe are ſupplied by the fluted, ſcolloped, ſerrated, thorny ſides of its branches. Upon the upper extremity of theſe branches grow its flowers, which are of a golden colour, roſaceous, and formed of five round or almoſt oval petala; this is ſucceeded by a triangular fruit, firſt of a light green with a ſlight caſt of red, then turning to a deep crimſon, with ſtreaks of white both at top and bottom. In the inſide it is divided into three cells, with a ſeed in each of them; the cells are of a greeniſh white, the ſeed round, and with no degree of humidity or moiſture about it, yet the green leaves contain a quantity of bluiſh watery milk, almoſt incredible.

Upon



Kolquall.

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Upon cutting two of the fineſt branches of a tree in its full vigour, a quantity of this iſſued out, which I cannot compute to be leſs than four Engliſh gallons, and this was ſo exceedingly cauſtic, that, though I waſhed the ſabre that cut it immediately, the ſtain has not yet left it.

When the tree grows old, the branches wither, and, in place of milk, the inſide appears to be full of powder, which is ſo pungent, that the ſmall duſt which I drew upon ſtriking a withered branch ſeemed to threaten to make me ſneeze to death, and the touching of the milk with my fingers excoriated them as if ſcalded with boiling water; yet I everywhere obſerved the wood-pecker piercing the rotten branches with its beak, and eating the inſects, without any impreſſion upon its olfactory nerves.

The only uſe the Abyſſinians make of this is for tanning hides, at leaſt for taking off the firſt hair. As we went weſt, the tree turned poor, the branches were few, ſeldom above two or three ribs, or diviſions, and theſe not deeply indented, whereas thoſe of Taranta had frequently eight. We afterwards ſaw ſome of them at the ſource of the Nile, in the cliff where the village of Geeſh is ſituated, but, though upon very good ground, they did not ſeem to thrive; on the contrary, where they grew on Taranta it was ſandy, ſtony, poor earth, ſcarce deep enough to cover the rock, but I ſuſpect they received ſome benefit from their vicinity to the ſea.

Some botaniſts who have ſeen the drawing have ſuppoſed this to be the euphorbia officinarum of Linnæus; but, without pretending to great ſkill in this matter, I ſhould fear there

would be ſome objection to this ſuppoſition: Firſt, on account of the flower, which is certainly roſaceous, compoſed of ſeveral petals, and is not campaniform: Secondly, That it produces no ſort of gum, either ſpontaneouſly or upon inciſion, at no period of its growth; therefore I imagine that the gum which comes from Africa in ſmall pieces, firſt white on its arrival, then turning yellow by age, is not the produce of this tree, which, it may be depended upon, produces no gum whatever.

JUBA the younger is ſaid, by Pliny, to have given this name to the plant, calling it after his own phyſician, brother to Muſa phyſician to Auguſtus. We need not trouble ourſelves with what Juba ſays of it, he is a worſe naturaliſt and worſe hiſtorian than the Nubian geographer.

RACK.

THIS is a large tree, and ſeems peculiar to warm climates. It abounds in Arabia Felix, in Abyſſinia, that is, in the low part of it, and in Nubia. The firſt place I ſaw it in was

Rack

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in Raback, a port in the Red Sea, where I discovered this singularity, that it grew in the sea within low-water mark. When we arrived at Massuah, in making a plan of the harbour, I saw a number of these in two islands both uninhabited, and without water, the one called Shekh Seide, the other Toulahout. These two islands are constantly overflowed by salt water, and though they are strangers to fresh, they yet produce large Rack-trees, which appear in a flourishing state, as if planted in a situation designed for them by nature.

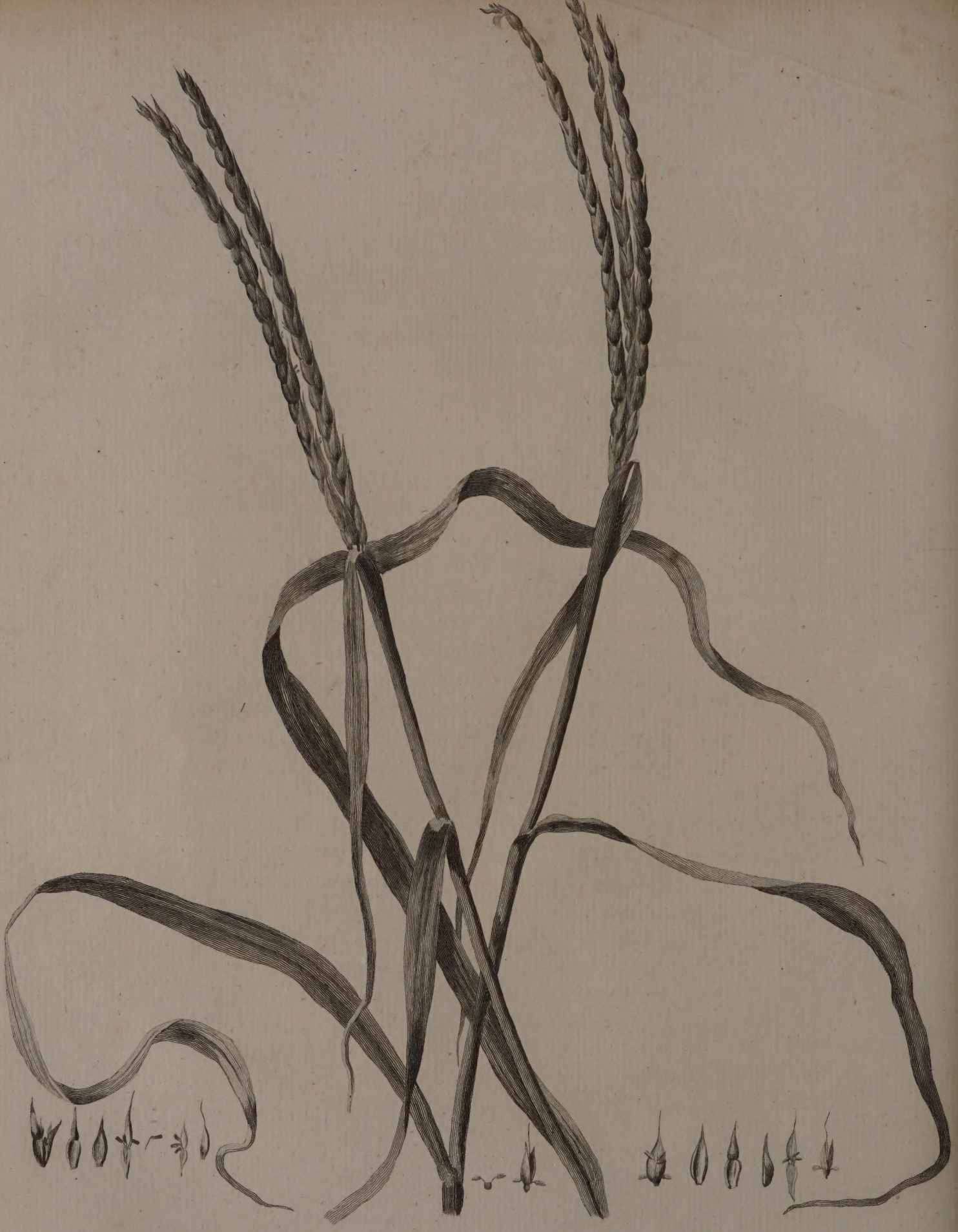
The Arabians, it is said, make boats of this tree. Its wood is so hardened by the sea, and also so bitter in taste, that no worm whatever will touch it. Of this tree the Arabians also make tooth-picks, these they sell in small bundles at Mecca, and are reputed to be favourable to the teeth, gums, and breath.

The reader will have observed frequent mention of some trees found in the desert which our camels would not eat. These are the Rack-tree, and the doom, or palma thebaica cuciofera*. These grow where they find salt springs in the sand; the desert being so impregnated with fossile salt in every part of it, that great blocks and strata of it are seen everywhere appearing above ground, especially about lat. 18°.

* Theophrast. hist. plants, lib. iii. cap. 8. lib. iv. cap. 2. Plin. Nat. Hist. lib. xiii. cap. 9. J. Bauh. lib. iii. cap. 86.

The Rack ſomething reſembles the aſh on its firſt appearance, though in the formation of its parts it is widely different. Its bark is white and poliſhed, ſmooth, and without furrows. Its trunk is generally 7 or 8 feet before it cleaves into branches. I have ſeen it above 24 feet in height, and 2 feet diameter.

Its leaves are, two and two, ſet on different ſides, that is, each two perpendicular to each other alternately. The ſmall branches that bear flowers part from the inſide of the leaf, and have the ſame poſition with the leaves; that is, ſuppoſe the loweſt pair of leaves and branches are on the eaſt or weſt ſide of the tree, the pair above them will be on the north and ſouth, and the next to theſe will be on the weſt as before. The leaves are long and very ſharp-pointed; in the inſide a deep green, and in the out a dirty white of a green caſt; they have no viſible ribs either in the inſide or out. The cup is a perianthium of four petals, which cloſely confine the flower, and is only a little flat at the top. The flower is compoſed of four petals deeply cut, in the interſtices of which is a ſmall green fruit divided by a fiſſure in the middle; its colour is deep orange, with lights of gold colour, or yellow, throughout it. It has no ſmell, taſtes very bitterly, and is never ſeen to be frequented by the bees. It is probable that a tree of this kind, tho' perhaps of another name, and in greater perfection, and therefore more fit for uſe, may be found in ſome of our Weſt-India iſlands between lat. 15° and 18°, eſpecially where there are ſalt ſprings and marſhes.



Geshe el Aube

Heath Sc.

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GIR GIR, OR GESHE EL AUBE.

THIS ſpecies of graſs is one of the acquiſitions which my travels have procured to botany. It was not before known; and the ſeed has not, as far as I know, produced any plant but in the garden of the king of France. It grows plentifully near Ras el Feel, not far from the banks of the large river Guangue, of which I have ſpoken in my return from Abyſſinia into Egypt. It begins to ſhoot in the end of April, when it firſt feels the humidity of the air. It advances then ſpeedily to its full height, which is about 3 feet 4 inches. It is ripe in the beginning of May, and decays, if not deſtroyed by fire, very ſoon afterwards.

THE leaf is long, pointed, narrow, and of a feeble texture. The ſtock from which it ſhoots produces leaves in great abundance, which ſoon turn yellow and fall to the ground. The goats, the only cattle theſe miſerable people have, are very fond of it, and for it abandon all other food while it is within their reach. On the leaves of ſome plants I have ſeen a very ſmall glutinous juice, like to what we ſee upon

upon the leaves of the lime or the plane, but in much leſs quantity; this is of the taſte of ſugar.

From the root of the branch ariſes a number of ſtalks, ſometimes two, but never, as far as I have ſeen, more than three. The flower and ſeed are defended by a wonderful perfection and quantity of ſmall parts. The head when in its maturity is of a purpliſh brown. The plate repreſents it in its natural ſize, with its conſtituent parts diſſected and ſeparated with very great attention. As they are many, each have a number affixed to them.

Male-flower described.

The 1ſt is the flower in its perfect ſtate ſeparated from its ſtalk. The 2d is the upper caſe. The 3d is the caſe, or ſheath, oppoſite to the foregoing. The 4th are inner caſes which incloſe the three ſtamina, with the beard and the ariſta. The 5th is its ſtile. The 6th its ſtamina, with the two caſes that incloſe them. The 7th is the ſheath, with its ear and its beard.

Female-flower described.

The 8th is the rudiment of the fruit, with two ſtigmata. The 9th, the perfect flower.

KANTUFFA;

Kantuffa

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KANTUFFA.

THIS thorn, like many men we meet daily in ſociety, has got itſelf into a degree of reputation and reſpect from the noxious qualities and power of doing ill which it poſſeſſes, and the conſtant exertion of theſe powers. The Abyſſinians, who wear coarſe cotton cloths, the coarſeſt of which are as thick as our blankets, the fineſt equal to our muſlin, are in the ſame degree annoyed with it. The ſoldier ſcreens himſelf by a goat's, leopard, or lion's ſkin, thrown over his ſhoulder, of which it has no hold. As his head is bare, he always cuts his hair ſhort before he goes to battle, leſt his enemy ſhould take advantage of it; but the women, wearing their hair long, and the great men, whether in the army or travelling in peace, being always cloathed, it never fails to incommode them, whatever ſpecies of raiment they wear. If their cloak is fine muſlin, the leaſt motion againſt it puts it all in rags; but if it is a thick, ſoft cloth, as thoſe are with which men of rank generally travel, it buries its thorns, great and ſmall, ſo deep in it that the

the wearer muſt either diſmount and appear naked, which to principal people is a great diſgrace, or elſe much time will be ſpent before he can diſengage himſelf from its thorns. In the time when one is thus employed, it rarely fails to lay hold of you by the hair, and that again brings on another operation, full as laborious, but much more painful than the other.

In the courſe of my hiſtory, when ſpeaking of the king, Tecla Haimanout II. firſt entering Gondar after his exile into Tigré, I gave an inſtance that ſhewed how dangerous it was for the natives to leave this thorn ſtanding; and of ſuch conſequence is the clearing of the ground thought to be, that every year when the king marches, among the neceſſary proclamations this is thought to be a very principal one, "Cut down the Kantuffa in the four quarters of the world, for I do not know where I am going." This proclamation, from the abrupt ſtile of it, ſeems at firſt abſurd to ſtranger ears, but when underſtood is full of good ſenſe and information. It means, Do not ſit goſſiping with your hands before you, talking, The king is going to Damot, he certainly will go to Gojam, he will be obliged to go to Tigré. That is not your buſineſs, remove nuiſances out of his way, that he may go as expeditiouſly as poſſible, or ſend to every place where he may have occaſion.

The branches of the Kantuffa ſtand two and two upon the ſtalk; the leaves are diſpoſed two and two likewiſe, without any ſingle one at the point, whereas the branches bearing the leaves part from the ſtalk: at the immediate joining of them are two thick thorns placed perpendicular and parallel

alternately; but there are alſo ſingle ones diſtributed in all the interſtices throughout the branch.

The male plant, which I ſuppoſe this to be, has a one-leaved perianthium, divided into five ſegments, and this falls off with the flower. The flower is compoſed of five petals, in the middle of which riſe ten ſtamina or filaments, the outer row ſhorter than thoſe of the middle, with long ſtigmata, having yellow farina upon them. The flowers grow in a branch, generally between three and four inches long, in a conical diſpoſition, that is, broader at the baſe than the point. The inſide of the leaves are a vivid green, in the outſide much lighter. It grows in form of a buſh, with a multitude of ſmall branches riſing immediately from the ground, and is generally ſeven or eight feet high. I ſaw it when in flower only, never when bearing fruit. It has a very ſtrong ſmell, reſembling that of the ſmall ſcented flower called mignionet, ſown in vaſes and boxes in windows, or rooms, where flowers are kept.

The wild animals, both birds and beaſts, eſpecially the Guinea fowl, know how well it is qualified to protect them. In this ſhelter, the hunter in vain could endeavour to moleſt them, were it not for a hard-haired dog, or terrier of the ſmalleſt ſize, who being defended from the thorns by the roughneſs of his coat, goes into the cover and brings them and the partridges alive one by one to his maſter.

GAGUEDI.

THE Gaguedi is a native of Lamalmon; whether it was not in a thriving ſtate, or whether it was the nature of the tree, I know not, but it was thick and ſtunted, and had but few branches; it was not above nine feet high, though it was three feet in diameter. The leaves and flower, however, ſeemed to be in great vigor, and I have here deſigned them all of their natural ſize as they ſtood.

THE leaves are long, and broader as they approach the end. The point is obtuſe; they are of a dead green not unlike the willow, and placed alternately one above the other on the ſtalk. The calix is compoſed of many broad ſcales lying one above the other, which operates by the preſſure upon one another, and keeps the calix ſhut before the flower arrives at perfection. The flower is monopetalous, or made of one leaf; it is divided at the top into four ſegments, where theſe end it is covered with a tuft of down, reſembling hair, and this is the caſe at the top alſo. When the flower is young and unripe, they are laid regularly ſo as to incloſe one another in a circle. As they grow

Gaguedi

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Gaguedi.

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grow old and expand, they ſeem to loſe their regular form, and become more confuſed, till at laſt, when arrived at its full perfection, they range themſelves parallel to the lips of the calix, and perpendicular to the ſtamina, in the ſame order as a roſe. The common receptacle of the flower is oblong, and very capacious, of a yellow colour, and covered with ſmall leaves like hair. The ſtile is plain, ſimple, and upright, and covered at the bottom with a tuft of down, and is below the common receptacle of the flower.

As this flower is of a complicated nature, I have given two figures of it, the one where the flower is ſeen in face, the other in the outſide. The ſtamina are three ſhort filaments inſerted in the ſegment of the flower near the ſummit.

I HAVE obſerved, in the middle of a very hot day, that the flowers unbend themſelves more, the calix ſeems to expand, and the whole flower to turn itſelf towards the ſun in the ſame manner as does the ſun-flower. When the branch is cut, the flower dries as it were inſtantaneouſly, ſo that it ſeems to contain very little humidity.

WANZEY.

THIS tree is very common throughout all Abyſſinia. I do not know the reaſon, but all the towns are full of them; every houſe in Gondar has two or three planted round it, ſo that, when viewed firſt from the heights, it appears like a wood, eſpecially all the ſeaſon of the rains; but very exactly on the firſt of September, for three years together, in a night's time, it was covered with a multitude of white flowers. Gondar, and all the towns about, then appeared as covered with white linen, or with new-fallen ſnow. This tree bloſſoms the firſt day the rains ceaſe. It grows to a conſiderable magnitude, is from 18 to 20 feet high. The trunk is generally about 3 feet and a half from the ground; it then divides into four or five thick branches, which have at leaſt 60° inclination to the horizon, and not more. Theſe large branches are generally bare, for half way up the bark is rough and furrowed. They then put out a number of ſmaller branches, are circular and fattiſh

at

Wanzey

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at the top, of a figure like ſome of our early pear-trees. The cup is a ſingle-leaved perianthium, red, marked very regularly before it flowers, but when the flower is out, the edges of the cup are marked with irregular notches, or ſegments, in the edge, which by no means correſpond in numbers or diſtances to thoſe that appeared before the perfection of the flower.

The flower itſelf conſiſts of one leaf of the funnel-faſhioned kind, ſpreads, and, when in its full perfection, folds back at the lips, though it has in ſome flowers marks or depreſſions which might appear like ſegments, yet they are not ſuch, but merely accidental, and the edge of moſt of the flowers perfectly even, without any mark of ſeparation.

The piſtil conſiſts of a very feeble thread; in the top it is biſected, or divided, into two; its apex is covered with a ſmall portion of yellow duſt. There are two, and ſometimes three, of theſe diviſions. The fruit is fully formed in the cup while the flower remains cloſed, and like a kind of tuft, which falls off, and the piſtil ſtill remains on the point of the fruit; is at firſt ſoft, then hardens like a nut, and is covered with a thin, green huſk. It then dries, hardens into a ſhell, and withers. The leaf is of a dark green, without varniſh, with an obtuſe point; the ribs few but ſtrong, marked both within and without. The outſide is a greeniſh yellow, without varniſh alſo.

I do not know that any part of this tree is of the ſmalleſt uſe in civil life, though its figure and parts ſeem to be

too

too conſiderable not to contain uſeful qualities if fairly inveſtigated by men endued with ſcience. I have ſeveral times mentioned in the hiſtory of the Galla, that this and the coffee-tree have divine honours paid them by each and all of the ſeven nations. Under this tree their king is choſen; under this tree he holds his firſt council, in which he marks his enemies, and the time and manner in which his own ſoldiers are to make their irruption into their country. His ſceptre is a bludgeon made of this tree, which, like a mace, is carried before him wherever he goes; it is produced in the general meetings of the nation, and is called Buco.

The wood is cloſe and heavy, the bark thick; there is then a ſmall quantity of white wood, the reſt is dark brown and reddiſh, not unlike the laburnam, and the buco is ſtript to this laſt appearance, and always kept plentifully anointed with butter.

FAREK,

Tarek

Heath Sc.

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FAREK, OR BAUHINIA ACUMINATA.

THIS beautiful ſhrub was found on the banks of a brook, which, falling from the weſt ſide of the mountain of Geeſh down the ſouth face of the precipice where the village is ſituated, is the firſt water that runs ſouthward into the lake Gooderoo, in the plain of Aſſoa. It is the water we employed for common uſes, not daring to touch that of the Nile, unleſs for drinking and dreſſing our food; it grew about 20 yards from this water, on the ſide of the cliff, not 400 yards from the fountain of the Nile itſelf. The name it bears here is Farek, which is, I ſuppoſe, given it from the diviſion of the leaf.

THIS ſhrub is compoſed of ſeveral feeble branches: to what height it grows I do not know, having never ſeen it before, nor were there many others where I found it. The longeſt branch of this was not four feet high. It grew on good black mold, but of no great depth, having at the bot-

tom a gritty or ſandy ſtone, and ſeemed in full perfection. The branch is of its natural ſize; on one of the ſmaller or collateral branches is the flower full blown, with two others that are buds. The parts are ſeparated and deſigned with care.

The firſt figure is the flower in its entire ſtate, ſeen in front, the ſtamina of courſe fore-ſhortened. The ſecond is an angular three-quarter view of the calix. The third is a back view of the calix. The fourth is the calix incloſing the ſtamina and piſtil, round which laſt they form a fruit or grain. The fifth is the flower ſtript of its calix, where is ſeen the germ, the ſtamina, and the piſtil. The ſixth is the ſtamina magnified to twice their ſize. The ſeventh is the lower leaf. The eighth, the upper leaf of the flower. The ninth, the germ, or rudiment of the fruit, with the piſtil joined to it, at the bottom of which there is a ſmall cavity. The tenth is the ſeed or fruit entire. The eleventh repreſents the inſide of the ſeed cut in half.

The leaves of this ſhrub are of a vivid green, and are joined to the branch by a long pedicle, in the inſide of which are the rudiments of another, which I ſuppoſe begin to ſprout when the large one is injured or falls off.

Though very little acquainted with the ſcientific part of botany myſelf, its claſſes, genera, and ſpecies, and ſtill leſs jealous of my reputation in it, I cannot conceive why my ſingle attention, in charging myſelf with a number of ſeeds in diſtant countries, and giving part to the garden at Paris, ſhould lead to a concluſion that I was ſo abſolutely unin-

ſtructed in the ſcience for which at leaſt I had ſhewn this attachment, that I could not diſtinguiſh the plant before us from the acacia vera. Is the knowledge of botany ſo notoriouſly imperfect in England, or is the pre-eminence ſo eſtabliſhed in France, as to authoriſe ſuch a preſumption of ignorance againſt a perſon, who, from his exertions and enterpriſe, ſhould hold ſome rank in the republic of letters among travellers and diſcoverers?

A COMPLIMENT was paid me by the Count de Buffon, or by ſuperior orders, in return for the articles I had preſented to the king's cabinet and garden at Paris, that the plants growing from the ſeeds which I had brought from Abyſſinia ſhould regularly, as they grew to perfection, be painted, and ſent over to me at London. The compliment was a handſome one, and, I was very ſenſible of it, it would have contributed more to the furniſhing the king's garden with plants than many lectures on botany, ex cathedra, will ever do.

BUT it was not neceſſary to ſhew his knowledge for the ſake of contraſting it with my ignorance, that Mr Juſſieu ſays this bauhinia is by Mr Bruce taken for an acacia vera. Now the acacia vera is a large, wide-ſpreading, thorny, hard, red-wooded, rough-barked, gum-bearing tree. Its flower, though ſometimes white, is generally yellow; it is round or globular, compoſed of many filaments or ſtamina; it is the Spina Egyptiaca, its leaves, in ſhape and diſpoſition, reſembling a mimoſa; in Arabic it is called Saiel, Sunt, Gerar; and if M. de Juſſieu had been at all acquainted with the hiſtory of the eaſt, he muſt have known it was the tree of every deſert, and conſequently that I muſt be better acquainted

with it than almoſt any traveller or botaniſt now alive. Upon what reaſonable ground then could he ſuppoſe, upon my bringing to him a rare and elegant ſpecies of bauhinia, which probably he had not before ſeen, that I could not diſtinguiſh it from an acacia, of which I certainly brought him none?

A LARGE ſpecies of Mullein likewiſe, or, as he pleaſes to term it, Bouillon Blanc, he has named Verbaſcum Abyſſinicum; and this the unfortunate Mr Bruce, it ſeems, has called an aromatic herb growing upon the high mountains. I do really believe, that M. de Juſſieu is more converſant with the Bouillon Blancs than I am; my Bouillons are of another colour; it muſt be the love of French cookery, not Engliſh taſte, that would ſend a man to range the high mountains for aromatic herbs to put in his Bouillon, if the Verbaſcum had been really one of theſe.

ALTHOUGH I have ſometimes made botany my amuſement, I do confeſs it never was my ſtudy, and I believe from this the ſcience has reaped ſo much the more benefit. I have repreſented to the eye, with the utmoſt attention, by the beſt drawings in natural hiſtory ever yet publiſhed, and to the underſtanding in plain Engliſh, what I have ſeen as it appeared to me on the ſpot, without tacking to it imaginary parts of my own, from preconceived ſyſtems of what it ſhould have been, and thereby creating varieties that never exiſted.

WHEN I arrived at the Lazaretto at Marſeilles, the Farenteit, as it is called in Nubia, or the Guinea-worm, the name it bears in Europe, having been broken by miſmanagement in my

my voyage from Alexandria, had retired into my leg and feſtered there. The foot, leg, and thigh, ſwelled to a monſtrous ſize, appearance of mortification followed, and the ſurgeon, with a tenderneſs and humanity that did honour to his ſkill, declared, though reluctantly, that if I had been a man of weak nerves, or ſoft diſpoſition, he would have prepared me for what was to happen by the interpoſition of a friend or a prieſt; but as from my paſt ſufferings he preſumed my ſpirit was of a more reſolute and firmer kind, he thought ſaving time was of the utmoſt conſequence, and therefore adviſed me to reſolve upon ſubmitting to an immediate amputation above the knee. To limp through the remains of life, after having eſcaped ſo many dangers with bones unbroken, was hard, ſo much ſo, that the loſs of life itſelf ſeemed the moſt eligible of the two, for the bad habit of body in which I found myſelf in an inveterate diſeaſe, for which I knew no remedy, and joined to this the prejudice that an Engliſhman generally has againſt foreign operators in ſurgery, all perſuaded me, that, after undergoing amputation, I had but very little chance of recovery, beſides long and great ſuffering, want of ſleep, want of food, and the weakneſs that attends lying long in ſick-bed, had gradually ſubdued the natural deſire and anxiety after life; every day death ſeemed to be a leſſer evil than pain. Patience, however, ſtrong fomentations, and inward applications of the bark, at length cured me.

It was immediately after receiving my melancholy ſentence, that, thinking of my remaining duties, I remembered I had carried abroad with me an order from the king to procure ſeeds for his garden. Before I had loſt the power of direction, I ordered Michael, my Greek ſervant, to take

the half of all the different parcels and packages that were lying by me, made up for ſeparate uſes, and pack them ſo as they might be ſent to Sir William Duncan the king's phyſician, then in Italy, to be conveyed by him to Lord Rochfort, ſecretary of ſtate. I by the ſame conveyance accompanied theſe with a ſhort letter, wrote with great difficulty, --that it appearing, beyond leaving room for hope, that my return was to be prevented by an unexpected diſeaſe, I begged his Majeſty to receive theſe as the laſt tender of my duty to him.

Michael, who never cared much for botany, at no period was leſs diſpoſed to give himſelf trouble about it than now; his maſter, friend, and patron was gone, as he thought; he was left in a ſtrange country; he knew not a word of the language, nor was he acquainted with one perſon in Marſeilles, for we had not yet ſtirred out of the lazaretto. What became of the ſeeds for a time I believe neither he nor I knew; but, when he ſaw my recovery advancing, fear of reproof led him to conceal his former negligence. He could neither read nor write, ſo that the only thing he could do was to put the firſt ſeed that came to hand in the firſt envelope, either in parchment or paper, that had writing upon the back of it, and, thus ſelected, the ſeeds came into the hands of M. de Juſſieu at Paris. By this operation of Michael, the verbaſcum became an aromatic herb growing on the higheſt mountains, and the bauhinia acuminata became an acacia vera.

The preſent of the drawings of the Abyſſinian plants was really, as it was firſt deſigned, a compliment, but it turned out juſt the contrary, for, in place of expecting the publication

that I was to make, in which they would naturally be a part, the gates of the garden were thrown open, and every dabbler in botany that could afford pen, ink, and paper, was put in poſſeſſion of thoſe plants and flowers, at a time when I had not ſaid one word upon the ſubject of my travels.

WHETHER this was owing to M. de Juſſieu, M. de Thouin, or M. Daubenton, to all, or to any one of them, I do not know, but I beg they will for a moment conſider the great impropriety of the meaſure. I ſuppoſe it would be thought natural, that a perſon delineating plants in a foreign country with ſuch care, riſk, and expence as I have done, ſhould wiſh to bring home the very ſeeds of thoſe plants he had delineated in preference to all others: ſuppoſing theſe had been the only ſeeds he could have brought home, and generoſity and liberality of mind had led him to communicate part of them to M. de Juſſieu, we ſhall further ſay, this laſt-mentioned gentleman had planted them, and when the time came, engraved, and publiſhed them, what would he think of this manner of repaying the traveller's attention to him? The bookſeller, that naturally expected to be the firſt that publiſhed theſe plants, would ſay to the traveller whoſe book he was to buy, This collection of natural hiſtory is not new, it has been printed in Sweden, Denmark, and France, and part of it is to be ſeen in every monthly magazine! Does M. de Juſſieu think, that, after having been once ſo treated, any traveller would ever give one ſeed to the king's garden? he certainly would rather put them in the fire; he muſt do ſo if he was a reaſonable man, for otherwiſe, by giving them away he is certainly ruining his own work, and defeating the purpoſes for which he had travelled.

WHEN

When I firſt came home, it was with great pleaſure I gratified the curioſity of the whole world, by ſhewing them each what they fancied the moſt curious. I thought this was an office of humanity to young people, and to thoſe of ſlender fortunes, or thoſe who, from other cauſes, had no opportunity of travelling. I made it a particular duty to attend and explain to men of knowledge and learning that were foreigners, everything that was worth the time they beſtowed upon conſidering the different articles that were new to them, and this I did at great length to the Count de Buffon, and Monſ. Gueneau de Montbeliard, and to the very amiable and accompliſhed Madame d'Aubenton. I cannot ſay by whoſe induſtry, but it was in conſequence of this friendly communication, a liſt or inventory (for they could give no more) of all my birds and beaſts were publiſhed before I was well got to England.

From what I have ſeen of the performances of the artiſts employed by the cabinet, I do not think that they have anticipated in any ſhape the merit of my drawings, eſpecially in birds and in plants; to ſay nothing milder of them, they are in both articles infamous; the birds are ſo diſſimilar from the truth, that the names of them are very neceſſarily wrote under, or over them, for fear of the old miſtake of taking them for ſomething elſe. I condeſcend upon the Erkoom as a proof of this. I gave a very fine ſpecimen of this bird in great preſervation to the King's collection; and though I ſhewed them the original, they had not genius enough to make a repreſentation that could with any degree of certainty be promiſed upon for a gueſs. When I was at Paris, they had a woman, who, in place of any merit, at leaſt that I could judge of, was protected, as they ſaid, by

Kuara

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the queen, and who made, what ſhe called, Drawings; thoſe of plants were ſo little characteriſtic, that it was, ſtrictly ſpeaking, impoſſible, without a very great conſideration, to know one plant from another: while there was, at ſame time, a man of the greateſt merit, M. de Seve, abſolutely without employment; tho', in my opinion, he was the beſt painter of every part of natural hiſtory either in France or England.

KUARA.

THIS beautiful tree, now preſented to the reader, is the production of the ſouth and S. W. parts of Abyſſinia. It is very frequent, and, with the ebony, almoſt the only wood of the province of Kuara, of which it bears the name; indeed in all Fazuclo, Nuba, and Guba, and the countries where there is gold. It is here deſigned in its natural ſize both leaves, flowers, and fruit, the whole ſo plainly, that it is needleſs to deſcant upon its particular parts, well known to naturaliſts. It is what they call a Corallodendron, probably from

from the colour of its flowers or of its fruit, both equal in colour to coral.

Its fruit is a red bean, with a black ſpot in the middle of it, which is incloſed in a round capſula, or covering, of a woody nature, very tough and hard. This bean ſeems to have been in the earlieſt ages uſed for a weight of gold among the Shangalla, where that metal is found all over Africa; and by repeated experiments, I have found that, from the time of its being gathered, it varies very little in weight, and may perhaps have been the very beſt choice that therefore could have been made between the collectors and the buyers of gold.

I have ſaid this tree is called Kuara, which ſignifies the Sun. The bean is called Carat, from which is derived the manner of eſteeming gold as ſo many carats fine. From the gold country in Africa it paſſed to India, and there came to be the weight of precious ſtones, eſpecially diamonds; ſo that to this day in India we hear it commonly ſpoken of gold or diamonds, that they are of ſo many carats fine, or weight. I have ſeen theſe beans likewiſe from the Weſt-Indian iſlands. They are juſt the ſame ſize, but, as far as I know, are not yet applied to any uſe there.

WALKUFFA.

Walkuffa

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WALKUFFA.

THIS tree grows in the Kolla, or hotteſt part of Abyſſinia. It does not flower immediately after the rains, as moſt trees in Abyſſinia do, that is, between the beginning of September and the Epiphany, when the latter rains in November do ſtill fall in violent periodical ſhowers, but it is after the Epiphany, towards the middle of January, that it firſt appears covered with bloſſoms. However beautiful, it has no ſmell, and is accounted deſtructive to the bees, for which reaſon it is rooted out and deſtroyed in thoſe countries that pay their revenue in honey. It reſembles the Kentiſh cherry-tree in appearance, eſpecially if that tree has but a moderate, not overſpreading top. The wood immediately below its bark is white, but under that a brownish yellow, ſomething like cedar; the old trees that I have ſeen turn darker, and are not unlike to the wood of the laburnum, or peaſe-cod tree. The natives ſay it does not ſwim in water. This however I can contradict upon experiment. The wood, indeed, is heavy, but ſtill it ſwims.

Although the painting of this tree, which I here exhibit, is neither more nor leſs accurate in the delineation of its parts than every other deſign of natural hiſtory given in this work to the public, yet the inimitable beauty of the ſubject itſelf has induced me to beſtow much more pains upon it than any other I have publiſhed; and, according to my judgment, it is the beſt executed in this collection. All its parts are ſo diſtinctly figured, the flower expoſed in ſuch variety of directions, that it ſuperſedes the neceſſity of deſcribing it to the ſkilful botaniſt, who will find here every thing he poſſibly could in the flower itſelf. This is a great advantage, for if the parts had been ever ſo ſtudiouſly and carefully reſerved in a *hortus ſiccus* as they are ſpread upon the paper, it would have been impoſſible not to have loſt ſome of its finer members, they are ſo fragil, as I have often experienced in different attempts to dry and preſerve it.

The flower conſiſts of five petals, part of each overlapping or ſupporting the other, ſo that it maintains its regular figure of a cup till the leaves fall off, and does not ſpread and disjoin firſt, as do the generality of theſe roſaceous flowers before they fall to the ground. Its colour is a pure white, in the midſt of which is a kind of ſheath, or involucrum, of a beautiful pink colour, which ſurrounds the piſtil, covering and concealing about one-third of it. Upon the top of this is a kind of impalement, conſiſting of five white upright threads, and between each of theſe are diſpoſed three very feeble ſtamina of unequal lengths, which make them ſtand in a triangular oblong form, covered with yellow farina.

The

Wooginoos
or
Brucea Antidysenterica.

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The piſtil is a yellow tube, divided at the top into five ſegments, and fixed at the bottom in what appears to be the rudiment of a fruit; but I never ſaw this in any ſtate of perfection, and the Abyſſinians ſay it never produces anything but a ſmall, round, black ſeed, concerning which I can ſay no further. The perianthium conſiſts of five ſharp-pointed ſegments, which incloſe the flower when not arrived to maturity, in a conical pod of a light-green colour, which colour it likewiſe keeps in its more advanced ſtate when ſpread. I do not know any other name it has but that of Walkuffa, nor do I know the ſignification of that name in any language.

WOOGINOOS, or BRUCEA ANTIDYSENTERICA.

THIS ſhrub, the branch of which is before us, is a production of the greateſt part of Abyſſinia, eſpecially the ſides of the valleys in the low country, or Kolla. It is indeed on the north ſide of Debra Tzai, where you firſt deſcend into the Kolla. This drawing was made at Hor-Ca-

camoot, in Ras el Feel, where the Wooginoos grows abundantly, and where dyſenteries reign continually, Heaven having put the antidote in the ſame place where grows the poiſon.

Some weeks before I left Gondar I had been very much tormented with this diſeaſe, and I had tried both ways of treating it, the one by hot medicines and aſtringents, the other by the contrary method of diluting. Small dozes of ipecacuanha under the bark had for ſeveral times procured me temporary relief, but relapſes always followed. My ſtrength began to fail, and, after a ſevere return of this diſeaſe, I had, at my ominous manſion, Hor-Cacamoot, the valley of the ſhadow of death, a very unpromiſing proſpect, for I was now going to paſs through the kingdom of Sennaar in the time of year when that diſeaſe moſt rages.

Sheba, chief of the Shangalla, called Ganjar, on the frontiers of Kuara, had at this time a kind of embaſſy or meſſage to Ras el Feel. He wanted to burn ſome villages in Atbara belonging to the Arabs Jeheina, and wiſhed Yaſine might not protect them: they often came and ſat with me, and one of them hearing of my complaint, and the apprehenſions I annexed to it, ſeemed to make very light of both, and the reaſon was, he found at the very door this ſhrub, the ſtrong and ligneous root of which, nearly as thick as a parſnip, was covered with a clean, clear, wrinkled bark, of a light-brown colour, and which peeled eaſily off the root. The bark was without fibres to the very end, where it ſplit like a fork into two thin diviſions. After having cleared the inſide of it of a whitiſh membrane, he laid it to dry in the ſun, and then would have bruiſed it between two ſtones,

ſtones, had we not ſhewn him the eaſier and more expeditious way of powdering it in a mortar.

The firſt doze I took was about a heaped tea-ſpoonful in a cup of camel's milk; I took two of theſe in a day, and then in the morning a tea-cup of the infuſion in camel's milk warm. It was attended the firſt day with a violent drought, but I was prohibited from drinking either water or bouza. I made privately a drink of my own; I took a little boiled water which had ſtood to cool, and in it a ſmall quantity of ſpirits. I after uſed ſome ripe tamarinds in water, which I thought did me harm. I cannot ſay I found any alteration for the firſt day, unleſs a kind of hope that I was growing better, but the ſecond day I found myſelf ſenſibly recovered. I left off laudanum and ipecacuanha, and reſolved to truſt only to my medicine. In looking at my journal, I think it was the 6th or 7th day that I pronounced myſelf well, and, though I had returns afterwards, I never was reduced to the neceſſity of taking one drop of laudanum, although before I had been very free with it. I did not perceive it occaſioned any extraordinary evacuation, nor any remarkable ſymptom but that continued thirſt, which abated after it had been taken ſome time.

In the courſe of my journey through Sennaar, I ſaw that all the inhabitants were well acquainted with the virtues of this plant. I had prepared a quantity pounded into powder, and uſed it ſucceſsfully everywhere. I thought that the mixing of a third of bark with it produced the effect more ſpeedily, and, as we had now little opportunity of getting milk, we made an infuſion in water. I tried a ſpiritous tincture,

tincture, which I do believe would ſucceed well. I made ſome for myſelf and ſervants, a ſpoonful of which we uſed to take when we found ſymptoms of our diſeaſe returning, or when it was raging in the place in which we chanced to reſide. It is a plain, ſimple bitter, without any aromatic or reſinous taſte. It leaves in your throat and pallet ſomething of roughneſs reſembling ipecacuanha.

This ſhrub was not before known to botaniſts. I brought the ſeeds to Europe, and it has grown in every garden, but has produced only flowers, and never came to fruit. Sir Joſeph Banks, preſident to the Royal Society, employed Mr Miller to make a large drawing from this ſhrub as it had grown at Kew. The drawing was as elegant as could be wiſhed, and did the original great juſtice. To this piece of politeneſs Sir Joſeph added another, of calling it after its diſcoverer's name, Brucea Antidyſenterica: the preſent figure is from a drawing of my own on the ſpot at Ras el Feel.

The leaf is oblong and pointed, ſmooth, and without collateral ribs that are viſible. The right ſide of the leaf is a deep green, the reverſe very little lighter. The leaves are placed two and two upon the branch, with a ſingle one at the end. The flowers come chiefly from the point of the ſtalk from each ſide of a long branch. The cup is a perianthium divided into four ſegments. The flower has four petals, with a ſtrong rib down the center of each. In place of a piſtil there is a ſmall cup, round which, between the ſegments of the perianthium and the petala of the flower, four feeble ſtamina ariſe, with a large ſtigma of a crim-

Cusso
or
Banksia Abissinica

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Flower of the Banksia

Abissinica.

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ſon colour, of the ſhape of a coffee-bean, and divided in the middle.

CUSSO, BANKESIA ABYSSINICA.

THE Cuſſo is one of the moſt beautiful trees, as alſo one of the moſt uſeful. It is an inhabitant of the high country of Abyſſinia, and indigenous there; I never ſaw it in the Kolla, nor in Arabia, nor in any other part of Aſia or Africa. It is an inſtance of the wiſdom of providence, that this tree does not extend beyond the limits of the diſeaſe of which it was intended to be the medicine or cure.

THE Abyſſinians of both ſexes, and at all ages, are troubled with a terrible diſeaſe, which cuſtom however has enabled them to bear with a kind of indifference. Every individual, once a month, evacuates a large quantity of worms; theſe are not the tape worm, or thoſe that trouble children, but they are the ſort of worm called Aſcarides, and the method of promoting theſe evacuations, is by infuſing a handful of dry

Cuſſo

Cuſſo flowers in about two Engliſh quarts of bouza, or the beer they make from teff; after it has been ſteeped all night, the next morning it is fit for uſe. During the time the patient is taking the Cuſſo, he makes a point of being inviſible to all his friends, and continues at home from morning till night. Such too was the cuſtom of the Egyptians upon taking a particular medicine. It is alledged that the want of this drug is the reaſon why the Abyſſinians do not travel, or if they do, moſt of them are ſhort-lived.

The ſeed of this is very ſmall, more ſo than the ſemen ſantonicum, which ſeems to come from a ſpecies of wormwood. Like it the Cuſſo ſheds its ſeed very eaſily; from this circumſtance, and its ſmallneſs, no great quantity of the ſeed is gathered, and therefore the flower is often ſubſtituted. It is bitter, but not nearly ſo much as the ſemen ſantonicum.

The Cuſſo grows ſeldom above twenty feet high, very rarely ſtraight, generally crooked or inclined. It is planted always near churches, among the cedars which ſurround them, for the uſe of the town or village. Its leaf is about 2¼ inches long, divided into two by a ſtrong rib. The two diviſions, however, are not equal, the upper being longer and broader than the lower; it is a deep unvarniſhed green, exceedingly pleaſant to the eye, the fore part covered with ſoft hair or down. It is very much indented, more ſo than a nettle-leaf, which in ſome meaſure it reſembles, only is narrower and longer.

These leaves grow two and two upon a branch; between each two are the rudiments of two pair of young ones, pre-

pared to ſupply the others when they fall off, but they are terminated at laſt with a ſingle leaf at the point. The end of this ſtalk is broad and ſtrong, like that of a palm-branch. It is not ſolid like the gerid of the date-tree, but opens in the part that is without leaves about an inch and a half from the bottom, and out of this aperture proceeds the flower. There is a round ſtalk bare for about an inch and a quarter, from which proceed crooked branches, to the end of which are attached ſingle flowers; the ſtalk that carries theſe proceeds out of every crook or geniculation; the whole cluſter of flowers has very much the ſhape of a cluſter of grapes, and the ſtalks upon which it is ſupported very much the ſtalk of the grape; a very few ſmall leaves are ſcattered through the cluſter of flowers.

The flower itſelf is of a greeniſh colour, tinged with purple; when fully blown, it is altogether of a deep red or purple; the flower is white, and conſiſts of five petals, in the midſt is a ſhort piſtil with a round head, ſurrounded by eight ſtamina of the ſame form, loaded with yellow farina. The cup conſiſts of five petals, which much reſemble another flower; they are rounded at the top, and nearly of an equal breadth every way.

The bark of the tree is ſmooth, of a yellowiſh white, interſperſed with brown ſtreaks which paſs through the whole body of the tree. It is not firm or hard, but rather ſtringy and reedy. On the upper part, before the firſt branch of leaves ſet out, are rings round the trunk, of ſmall filaments, of the conſiſtence of horſe hair; theſe are generally fourteen or ſixteen in number, and are a very remarkable characteriſtic belonging to this tree.

As the figure of this plant is true and exact beyond all manner of exception, I cannot but think it may be found in latitudes 11 or 12° north in the Weſt Indies or America; and having been found a gentle, ſafe, and efficacious medicine in Abyſſinia, it is not doubted but the ſuperior ſkill of our phyſicians would turn it to the advantage of mankind in general, when uſed here in Europe. In conſequence of the eſtabliſhed prerogatives of diſcoverers, I have named this beautiful and uſeful tree after Sir Joſeph Banks, Preſident of the royal Society.

TEFF.

THIS grain is commonly ſown all over Abyſſinia, where it ſeems to thrive equally on all ſorts of ground; from it is made the bread which is commonly uſed throughout Abyſſinia. The Abyſſinians, indeed, have plenty of wheat, and ſome of it of an excellent quality: They likewiſe make

as

Teff

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as fine wheat-bread as any in the world, both for colour and for taſte; but the uſe of wheat-bread is chiefly confined to people of the firſt rank. On the other hand, Teff is uſed by all ſorts of people from the king downwards, and there are kinds of it which are eſteemed fully as much as wheat. The beſt of theſe is as white as flour, exceedingly light, and eaſily digeſted. There are others of a browner colour, and ſome nearly black; this laſt is the food of ſoldiers and ſervants. The cauſe of this variation of colour is manifold; the Teff that grows on light ground having a moderate degree of moiſture, but never dry; the lighter the earth is in which it grows, the better and whiter the Teff will be; the huſk too is thinner. That Teff, too, that ripens before the heavy rains, is uſually whiter and finer, and a great deal depends upon ſifting the huſk from it after it is reduced to flour, by bruiſing or breaking it in a ſtone-mill. This is repeated ſeveral times with great care, in the fineſt kind of bread, which is found in the houſes of all people of rank or ſubſtance. The manner of making it is by taking a broad earthen jar, and having made a lump of it with water, they put it into an earthen jar at ſome diſtance from the fire, where it remains till it begins to ferment, or turn ſour; they then bake it into cakes of a circular form, and about two feet in diameter: It is of a ſpungy, ſoft quality, and not a diſagreeable ſouriſh taſte. Two o theſe cakes a-day, and a coarſe cotton cloth once a-year, are the wages of a common ſervant.

At their banquets of raw meat, the fleſh being cut in ſmall bits, is wrapt up in pieces of this bread, with a proportion of foſſile ſalt and Cayenne pepper. Before the company ſits down to eat, a number of theſe cakes of different

qualities are placed one upon the other, in the ſame manner as our plates, and the principal people, ſitting firſt down, eat the white Teff; the ſecond, or coarſer ſort, ſerves the ſecond-rate people that ſucceed them, and the third is for the ſervants. Every man, when he is done, dries or wipes his fingers upon the bread which he is to leave for his ſucceſſor, for they have no towels, and this is one of the moſt beaſtly cuſtoms of the whole.

The Teff bread, when well toaſted, is put into a large jar, after being broken into ſmall pieces, and warm water poured upon it. It is then ſet by the fire, and frequently ſtirred for ſeveral days, the mouth of the jar being cloſe covered. After being allowed to ſettle three or four days, it acquires a ſouriſh taſte, and is what they call Bouza, or the common beer of the country. The bouza in Atbara is made in the ſame manner, only, inſtead of Teff, cakes of barley-meal are employed; both are very bad liquors, but the worſt is that made of barley.

The plant is herbaceous; from a number of weak leaves proceeds a ſtalk of about twenty-eight inches in length, not perfectly ſtraight, ſmooth, but jointed or knotted at particular diſtances. This ſtalk is not much thicker than that of a carnation or jellyflower. About eight inches from the top, a head is formed of a number of ſmall branches, upon which it carries the fruit and flowers; the latter of which is ſmall, of a crimſon colour, and ſcarcely perceptible by the naked eye, but from the oppoſition of that colour. The piſtil is divided into two, ſeemingly attached to the germ of the fruit, and has at each end ſmall capillaments forming a bruſh. The ſtamina are three in number, two on the

lower ſide of the piſtil, and one on the upper. Theſe are, each of them, crowned with two oval ſtigmata, at firſt green, but after, crimſon. The fruit is formed in a capſula, conſiſting of two conical, hollow leaves, which, when cloſed, ſeems to compoſe a ſmall conical pod, pointed at the top. The fruit, or ſeed, is oblong, and is not ſo large as the head of the ſmalleſt pin, yet it is very prolific, and produces theſe ſeeds in ſuch quantity as to yield a very abundant crop in the quantity of meal.

WHETHER this grain was ever known to the Greeks and Romans, is what we are no where told. Indeed, the various grains made uſe of in antiquity, are ſo lamely and poorly deſcribed, that, unleſs it is a few of the moſt common, we cannot even gueſs at the reſt. Pliny mentions ſeveral of them, but takes no notice of any of their qualities, but medicinal ones; ſome he ſpecifies as growing in Gaul, others in the Campania of Rome, but takes no notice of thoſe of Ethiopia or Egypt. Among theſe there is one which he calls Tiphe, but ſays not whence it came; the name would induce us to believe that this was Teff, but we can only venture this as a conjecture not ſupported. But it is very improbable, connected as Egypt and Ethiopia were from the firſt ages, both by trade and religion, that a grain of ſuch conſequence to one nation ſhould be utterly unknown to the other. It is not produced in the low or hot country, the Kolla, that is, in the borders of it; for no grain can grow, as I have already ſaid, in the Kolla or Mazaga itſelf; but in place of Teff, in theſe borders, there grows a black grain called Tocuſſo. The ſtalk of this is ſcarce a foot long; it has four diviſions where the grain is produced, and ſeems to be a ſpecies of the meiem

mſalib,

mſalib, or gramen crucis, the graſs of the croſs. Of this a very black bread is made, ate only by the pooreſt ſort; but though it makes worſe bread, I think it makes better bouza.

Some have thought, from the frequent uſe of Teff, hath come that diſeaſe of worms which I have mentioned in the article Cuſſo. But I am inclined to think this is not the caſe, becauſe the Gibbertis, or Mahometans, born in Abyſſinia, all uſe Teff in the ſame proportion as the Chriſtians, yet none of theſe are troubled with worms. And from this I ſhould be led to think that this diſeaſe ariſes rather from eating raw meat, which the Mahometans do not, and therefore are not affected with this diſorder as the Chriſtians are.

OF

OF QUADRUPEDS.

I BELIEVE there is in the world no country which produces a greater number, or variety of quadrupeds, whether tame or wild, than Abyſſinia. As the high country is now perfectly cleared of wood, by the waſte made in that article from the continual march of armies, the mountains are covered to the very top, with perpetual verdure, and moſt luxuriant herbage.

THE long rains in ſummer are not ſuddenly abſorbed by the rays of the ſun: a thick veil defends the ground when it is in the zenith, or near it, affording heat to promote vegetation without withering it by deſtroying the moiſture, and by this means a never-failing ſtore of provender is conſtantly provided for all ſorts of cattle. Of the tame or cow-kind, great abundance preſent themſelves everywhere, differing in ſize, ſome having horns of various dimenſions;

ſome without horns at all, differing alſo in the colour and length of their hair, by having boſſes upon their backs, according as their paſture or climate varies. There are kinds alſo deſtined to various uſes; ſome for carriage, like mules or aſſes, ſome to be rode upon like horſes; and theſe are not the largeſt of that kind, but generally below the middle ſize. As for that ſpecies bearing the monſtrous horns, of which I have often ſpoke in my narrative, their ſize is not to be eſtimated by that of their horns; the animal itſelf is not near ſo big as a common Engliſh cow; the growth of the horn is a diſeaſe which proves fatal to them, becauſe encouraged for a peculiar purpoſe. Whether it would be otherwiſe curable, has not yet, I believe, been ever aſcertained by experiment. But the reader may with confidence aſſure himſelf, that there are no ſuch animals as carnivorous bulls in Africa, and that this ſtory has been invented for no other purpoſe but a deſire to exhibit an animal worthy of wearing theſe prodigious horns. I have always wiſhed that this article, and ſome others of early date, were blotted out of our philoſophical tranſactions; they are abſurdities to be forgiven to infant phyſic and to early travels, but they are unworthy of ſtanding among the cautious, well-ſupported narratives of our preſent philoſophers. Though we may ſay of the buffaloe that it is of this kind, yet we cannot call it a tame animal here; ſo far from that, it is the moſt ferocious in the country where he reſides; this, however, is not in the high temperate part of Abyſſinia, but in the ſultry Kolla, or valleys below, where, without hiding himſelf, as wild beaſts generally do, as if conſcious of ſuperiority of ſtrength, he lyes at his eaſe among large ſpreading ſhady trees near the cleareſt and deepeſt rivers, or the largeſt ſtagnant pools of the pureſt water. Notwithſtanding;

ing this, he is in his perſon as dirty and ſlovenly as he is fierce, brutal, and indocile; he ſeems to maintain among his own kind the ſame character for manners that the wolf does among the carnivorous tribe.

But what is very particular is, this is the only animal kept for giving milk in Egypt. And though apparently theſe are of the ſame ſpecies, and came originally from Ethiopia, their manners are ſo entirely changed by their migration, difference of climate or of food, that, without the exertion of any art to tame them, they are milked, conducted to and fro, and governed by children of ten years old, without apprehenſion, or any unlucky accident having ever happened.

Among the wild animals are prodigious numbers of the gazel, or antelope kind; the bohur, ſaſſa, feeho, and madoqua, and various others; theſe are ſeldom found in the cultivated country, or where cattle paſture, as they chiefly feed on trees; for the moſt part, they are found in broken ground near the banks of rivers, where, during the heat of the day, they conceal themſelves, and ſleep under cover of the buſhes; they are ſtill more numerous in thoſe provinces whoſe inhabitants have been extirpated, and the houſes ruined or burnt in time of war, and where wild oats, grown up ſo as to cover the whole country, afford them a quiet reſidence, without being diſturbed by man. Of this I have mentioned a very remarkable inſtance in the firſt attempt I made to diſcover the ſource of the Nile, (vol. III. p. 439.) The hyæna is ſtill more numerous: enough has been ſaid about him; I apprehend that there are two ſpecies. There are few varieties of the dog or fox kind. Of theſe

the moſt numerous is the Deep, or, as he is called, the Jackal; this is preciſely the ſame in all reſpects as the Deep of Barbary and Syria, who are heard hunting in great numbers, and howling in the evening and morning. The true Deep, as far as appears to me, is not yet known, at leaſt I never yet ſaw in any author a figure that reſembled him. The wild boar, ſmaller and ſmoother in the hair than that of Barbary or Europe, but differing in nothing elſe, is met frequently in ſwamps or banks of rivers covered with wood. As he is accounted unclean in Abyſſinia, both by Chriſtians and Mahometans, conſequently not perſecuted by the hunter, both he and the fox ſhould have multiplied; but it is probable they, and many other beaſts, when young, are deſtroyed by the voracious hyæna.

THE elephant, rhinoceros, giraffa, or camelopardalis, are inhabitants of the low hot country; nor is the lion, or leopard, faadh, which is the panther, ſeen in the high and cultivated country. There are no tigers in Abyſſinia, nor, as far as I know, in Africa; it is an Aſiatic animal; for what reaſon ſome travellers, or naturaliſts, have called him the tiger-wolf, or miſtaken him altogether for the tiger, is what I cannot diſcover. Innumerable flocks of apes, and baboons of different kinds, deſtroy the fields of millet every where; theſe, and an immenſe number of common rats, make great deſtruction in the country and harveſt. I never ſaw a rabbit in Abyſſinia, but there is plenty of hares; this, too, is an animal which they reckon unclean; and not being hunted for food, it ſhould ſeem they ought to have increaſed to greater numbers. It is probable, however, that the great quantity of eagles, vultures, and beaſts of prey, has

Rhinoceros of Africa.

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Heath Sc.

kept them within reaſonable bounds. The hippopotamus and crocodile abound in all the rivers, not only of Abyſſinia, but as low down as Nubia and Egypt: there is no good figure nor deſcription extant, as far as I know, of either of theſe animals; ſome unforeſeen accident always thwarted and prevented my ſupplying this deficiency. There are many of the aſs kind in the low country towards the frontiers of Atbara, but no Zebras; theſe are the inhabitants of Fazuclo and Narea.

RHINOCEROS.

NATURALISTS ſeem now in general to be agreed that there are two ſpecies of this quadruped, the firſt having two horns upon his noſe, the ſecond one. It is alſo a generally received opinion, that theſe different ſpecies are confined to diſtant places of the old continent; that with one horn is thought to be excluſively an inhabitant of Aſia, that with two horns to be only found in Africa.

Whether this diviſion is right in all its parts, I ſhall not advance. That there is a rhinoceros in Aſia with one horn is what we poſitively know, but that there is none of the other ſpecies in that part of the continent does not appear to me as yet ſo certain. Again, there is no ſort of doubt, that though the rhinoceros with two horns is an inhabitant of Africa, yet is it as certain that the ſpecies with one horn is often found in that country likewiſe, eſpecially in the eaſtern part, where is the myrrh and cinnamon country, towards Cape Gardefan, which runs into the Indian ocean beyond the Straits of Babelmandeb. And if I was to credit the accounts which the natives of the reſpective countries have given me, I ſhould be induced to believe that the rhinoceros of the kingdom of Adel had but one horn. They ſay this is the caſe where little rain falls, as in Adel, which, though within the tropics, is not liable to that ſeveral months deluge, as is the inland part of the country more to the weſtward. They ſay further, that all that woody part inhabited by Shangalla, correſponding to Tigré and Siré, is the haunt of the rhinoceros with two horns. Whether this is really the caſe I do not pretend to aver, I give the reader the ſtory with the authority; I think it is probable; but as in all caſes where very few obſervations can be repeated, as in this, I leave him entirely to the light of his own underſtanding.

The animal repreſented in this drawing is a native of Tcherkin, near Ras el Feel, of the hunting of which I have already ſpoken in my return through the deſert to Egypt, and this is the firſt drawing of the rhinoceros with a double horn that has ever yet been preſented to the public. The firſt figure of the Aſiatic rhinoceros, the ſpecies having but one

one horn, was painted by Albert Durer, from the life, from one of thoſe ſent from India by the Portugueſe in the beginning of the ſixteenth century. It was wonderfully ill-executed in all its parts, and was the origin of all the monſtrous forms under which that animal has been painted, ever ſince, in all parts of the world. Several modern philoſophers have made amends for this in our days; Mr Parſons, Mr Edwards, and the Count de Buffon, have given good figures of it from life; they have indeed ſome faults, owing chiefly to preconceived prejudices and inattention. Theſe, however, were rhinoceroſes with one horn, all Aſiatics. This, as I have before ſaid, is the firſt that has been publiſhed with two horns, it is deſigned from the life, and is an African; but as the principal difference is in the horn, and as the manners of this beaſt are, I believe, very faithfully deſcribed and common to both ſpecies, I ſhall only note what I think is deficient in his hiſtory, or what I can ſupply from having had an opportunity of ſeeing him alive and at freedom in his native woods.

It is very remarkable, that two ſuch animals as the elephant and rhinoceros ſhould have wholly eſcaped the deſcription of the ſacred writers. Moſes, and the children of Iſrael, were long in the neighbourhood of the countries that produced them, both while in Egypt and in Arabia. The claſſing of the animals into clean and unclean, ſeems to have led the legiſlator into a kind of neceſſity of deſcribing, in one of the claſſes, an animal, which made the food of the principal Pagan nations in the neighbourhood. Conſidering the long and intimate connection Solomon had with the ſouth-coaſt of the Red Sea, it is next to impoſſible that he was not acquainted with them, as both David his

father, and he, made plentiful uſe of ivory, as they frequently mention in their writings, which, along with gold, came from the ſame part. Solomon, beſides, wrote expreſsly upon Zoology, and, we can ſcarce ſuppoſe, was ignorant of two of the principal articles of that part of the creation, inhabitants of the great Continent of Aſia eaſt from him, and that of Africa on the ſouth, with both which territories he was in conſtant correſpondence.

THERE are two animals, named frequently in ſcripture, without naturaliſts being agreed what they are. The one is the behemoth, the other the reem, both mentioned as the types of ſtrength, courage, and independence on man, and as ſuch exempted from the ordinary lot of beaſts, to be ſubdued by him, or reduced under his dominion. Tho' this is not to be taken in a literal ſenſe, for there is no animal without the fear or beyond the reach of the power of man, we are to underſtand this as applicable to animals poſſeſſed of ſtrength and ſize ſo ſuperlative as that in theſe qualities other beaſts bear no proportion to them.

THE behemoth, then, I take to be the elephant; his hiſtory is well known, and my only buſineſs is with the reem, which I ſuppoſe to be the rhinoceros. The derivation of this word, both in the Hebrew and the Ethiopic, ſeems to be from erectneſs, or ſtanding ſtraight. This is certainly no particular quality in the animal itſelf, who is not more, or even ſo much erect as many other quadrupeds, for, in its knees it is rather crooked; but it is from the circumſtance and manner in which his horn is placed. The horns of all other animals are inclined to ſome degree of paralelizm, with his noſe, or *os frontis*. The horn of the rhinoceros

ceros alone is erect and perpendicular to this bone, on which it ſtands at right angles, thereby poſſeſſing a greater purchaſe, or power, as a lever, than any horn could poſſibly have in any other poſition.

This ſituation of the horn is very happily alluded to in the ſacred writings: "My horn ſhalt thou *exalt* like the "horn of an unicorn*:" and the horn here alluded to is not wholly figurative, as I have already taken notice of in the courſe of my hiſtory †, but was really an ornament, worn by great men in the days of victory, preferment, or rejoicing, when they were anointed with new, ſweet, or freſh oil, a circumſtance which David joins with that of erecting the horn.

Some authors, for what reaſon I know not, have made the reem, or unicorn, to be of the deer or antelope kind, that is, of a genus whoſe very character is fear and weakneſs, very oppoſite to the qualities by which the reem is deſcribed in ſcripture; beſides, it is plain the reem is not of the claſs of clean quadrupeds; and a late modern traveller, very whimſically, takes him for the leviathan, which certainly was a fiſh. It is impoſſible to determine which is the ſilleſt opinion of the two. Balaam, a prieſt of Midian, and ſo in the neighbourhood of the haunts of the rhinoceros, and intimately connected with Ethiopia, for they themſelves were ſhepherds of that country, in a tranſport, from contemplating the ſtrength of Iſrael whom he was brought to curſe, ſays, they had as it were the ſtrength of

* Pſalm xcii. ver. 10. † Vol. iii. p. 220.

of the reem ¶. Job* makes frequent alluſion to his great ſtrength, and ferocity, and indocility. He aſks, Will the reem be willing to ſerve thee, or abide by thy crib? that is, Will he willingly come into thy ſtable, and eat at thy manger? And again, Canſt thou bind the reem with a band in the furrow, and will he harrow the vallies after thee†? In other words; Canſt thou make him go in the plow or harrows?

Isaiah‡, who of all the prophets ſeem to have known Egypt and Ethiopia the beſt, when prophecying about the deſtruction of Idumea, ſays, that the reem ſhall come down with the fat cattle; a proof that he knew his habitation was in the neighbourhood. In the ſame manner as when foretelling the deſolation of Egypt, he mentions as one manner of effecting it, the bringing down the fly§ from Ethiopia to meet the cattle in the deſert, and among the buſhes, and deſtroy them there, where that inſect did not ordinarily come but on command‖, and where the cattle fled every year to ſave themſelves from that inſect.

The Rhinoceros, in Geez, is called Arwé Hariſh, and in the Amharic, Auraris, both which names ſignify the large wild beaſt with the horn. This would ſeem as if applied to the ſpecies that had but one horn. On the other hand, in the country of the Shangalla, and in Nubia adjoining, he is called Girnamgirn, or horn upon horn, and this would ſeem to denote that he had two. The Ethiopic text renders the

¶ Numb. chap. xxiii. ver. 22.

* Job, chap. xxxix. ver. 9. † Job, chap. xxxix. ver. 10. ‡ Iſaiah, chap. xxxiv. ver. 7. § Iſaiah, chap. vii. ver. 18. and 19. ‖ Exod. chap. viii. ver. 22.

the word Reem, Arwé Hariſh, and this the Septuagint tranſlates Monoceros, or Unicorn.

If the Abyſſinian rhinoceros had invariably two horns, it ſeems to me improbable the Septuagint would call him Monoceros, eſpecially as they muſt have ſeen an animal of this kind expoſed at Alexandria in their time, then firſt mentioned in hiſtory, at an exhibition given by Ptolemy Philadelphus at his acceſſion to the crown, before the death of his father, of which we have already made mention.

The principal reaſon of tranſlating the word Reem, Unicorn, and not Rhinoceros, is from a prejudice that he muſt have had but one horn. But this is by no means ſo well-founded, as to be admitted as the only argument for eſtabliſhing the exiſtence of an animal which never has appeared, after the ſearch of ſo many ages. Scripture ſpeaks of the horns of the unicorn *, ſo that, even from this circumſtance, thé reem may be the rhinoceros, as the Aſiatic, and part of the African rhinoceros, may be the unicorn. It is ſomething remarkable, that, notwithſtanding Alexander's expedition into India, this quadruped was not known to Ariſtotle †. Strabo and Athenæus both ſpeak of him from report, as having been ſeen in Egypt. Pauſanius calls him an Ethiopic bull; the ſame manner the Romans called the elephants *Lucas bovis*, Lucanian oxen, as being firſt ſeen in that part of Magna Grecia. Pompey exhibited him firſt

* Deut. chap. xxxiii. 17. Pſalm xxii. 21.

† This ſhews that the Moſaic pavement of Præneſte is not a record of Alexander's expedition into India, as Doctor Shaw has pretended, ſect. vii. p. 423.

in Italy, and he was often produced in games as low a Heliogabalus.

As all theſe were from Aſia, it ſeems moſt probable they had but one horn, and they are repreſented as ſuch in the medals of Domitian. Yet Martial * ſpeaks of one with two horns; and the reality of the rhinoceros ſo armed being till now uncertain, commentators have taken pains to perſuade us that this was an error of the poet; but there can be now no doubt that the poet was right, and the commentators wrong, a caſe that often happens.

I DO not know from what authority the author of the Encyclopedia † refers to the medals of Domitian, where the rhinoceros, he ſays, has a double horn; in all thoſe that have been publiſhed, one horn only is figured. The uſe made of theſe horns is in the turning-loom; they are made into cups, and ſold to ignorant people as containing antidotes againſt poiſons; for this quality they generally make part of the preſents of the Mogul and kings of Perſia at Conſtantinople. Some modern naturaliſts have ſcarce yet given over this prejudice; which might have had a poſſibility of truth while the Galenical ſchool flouriſhed, and vegetable poiſons were chiefly uſed; but it is abſurd to ſuppoſe, that what might diſcover ſolanum, or deadly night-ſhade, upon contact, would have the like effect upon the application of arſenic; and from experience I can pronounce, that a cup of this is alike uſeleſs in the diſcovery of either. The handles of

* Martial de Spectac. † See Supplement to Chambers's Dict.

of daggers are always, in Abyſſinia, made of this horn, and theſe being the only works to which they are applied, is one of the reaſons why I have ſaid we ſhould not raſhly pronounce that the Aſiatic rhinoceros has but one horn, merely becauſe the foremoſt, or round horn, is the only one of the many that have been ſent from India. In Abyſſinia we ſeldom ſee the hunters at the pains to cut off or bring to market the ſecond horn of the rhinoceros they have ſlain, becauſe, being flat, in place of round, it has not diameter or ſubſtance enough to ſerve for the uſes juſt ſpoken of; ſo that the round horn is the only one that appears either at Gondar or Cairo; and if we were to judge from this circumſtance, the African rhinoceros is unicorn for the ſame reaſon as we do the Aſiatic. The horns of this animal are hard and ſolid, of a reddiſh brown on the outſide, a yellow inclining to gold within, and the heart a ſpot of black, which occupies the ſpace of near two inches where the diameter of the horn is five. The ſurface takes a perfect poliſh, but when dried is very liable to ſplinter and crack. It likewiſe warps with heat, and ſcratches eaſily. And this was the reaſon that, though exceeding beautiful when new, it never would endure any time when made into the form of a ſnuff-box, but warped and ſplit with the heat of the pocket, though this I believe was chiefly owing to the lamina, or flat pieces into which it was cut, being always left too thin. The foremoſt of theſe horns crook inward at the point, but by no means with ſo ſudden a curve as is repreſented by the Count de Buffon. How ſenſible the animal is in this part, may be known from the accident I was eye-witneſs to in hunting him at Tcherkin, where a muſquet-ball breaking off a point of that horn, gave him ſuch a ſhock, as to deprive him for an inſtant of all appear-

ance of life. Behind the foremoſt, or crooked horn, is the flat ſtraight one, and again immediately behind that I have ſeen diſtinctly the rudiments of a third, and the horn full an inch long. If we may judge by its baſe, it would ſeem this third horn was intended to be as long as the other two.

The hunters of theſe large beaſts are called Agageer, from Agaro, to kill, by cutting the hams or tendon of Achilles with a ſword. I have already deſcribed the manner of this hunting. Theſe Agageers, the only people that have an opportunity of obſerving, if they would only tell what they do obſerve truly, ſay, they frequently ſee rhinoceroſes with three horns grown; that this laſt is round, but does not crook at the point, and is not quite ſo long as are the other two, nor tapered ſo much as the foremoſt or crooked one; but this I leave entirely upon their veracity. I never did ſee the animal myſelf, nor three grown-horns adhering to each other, as I have ſeen two. So if this is truth, here is a third ſpecies of this quadruped. They ſay the third horn is only upon the male, and does not grow till he is advanced in years; the double horn which I have is fixed to a ſtrong muſcle or cartilage; when dry, exceedingly tough. It comes down the *os frontis*, and along the bone of the noſe; but not having obſerved accurately enough at the time the carcaſe was lying before me, I do not remember how this muſcle terminated or was made faſt, either at the occiput or on the noſe. It has been imagined by ſeveral that the horn of the rhinoceros and the teeth of the elephant were arms which nature gave them againſt each other: that want of food, and vexation from being deprived of their natural habits, may make any two

beaſts

beaſts of nearly equal ſtrength fight or deſtroy each other, cannot be doubted; and accordingly we ſee that the Romans made theſe two animals fight at ſhows and public games: but this is not nature, but the artifice of man; there muſt be ſome better reaſon for this extraordinary conſtruction of theſe two animals, as well as the different one of that of ſo many others. They have been placed in extenſive woods and deſerts, and there they hide themſelves in the moſt inacceſſible places; food in great plenty is round about them; they are not carnivorous, they are not rivals in love; what motive can they have for this conſtant premeditated deſire of fighting?

I HAVE ſaid the rhinoceros does not eat hay or graſs, but lives entirely upon trees; he does not ſpare the moſt thorny ones, but rather ſeems to be fond of them; and it is not a ſmall branch that can eſcape his hunger, for he has the ſtrongeſt jaws of any creature I know, and beſt adapted to grinding or bruiſing any thing that makes reſiſtance. He has twenty-eight teeth in all, ſix of which are grinders, and I have ſeen ſhort indigeſted pieces of wood full three inches diameter voided in his excrements, and the ſame of the elephant.

BUT beſides theſe trees, capable of moſt reſiſtance, there are in theſe vaſt foreſts within the rains, trees of a ſofter conſiſtence, and of a very ſucculent quality, which ſeem to be deſtined for his principal food. For the purpoſe of gaining the higheſt branches of theſe, his upper lip is capable of being lengthened out ſo as to increaſe his power of laying hold with this in the ſame manner as the elephant does with his trunk. With this lip, and the aſſiſtance of his

tongue, he pulls down the upper branches which have moſt leaves, and theſe he devours firſt; having ſtript the tree of its branches, he does not therefore abandon it, but placing his ſnout as low in the trunk as he finds his horn will enter, he rips up the body of the tree, and reduces it to thin pieces, like ſo many laths; and when he has thus prepared it, he embraces as much of it as he can in his monſtrous jaws, and twiſts it round with as much eaſe as an ox would do a root of celery, or any ſuch pot-herb or garden-ſtuff.

Such, too, is the practice of the elephant; we ſaw, at every ſtep in theſe immenſe foreſts, trees in different progreſſes of this operation, ſome diveſted of their leaves and branches, and cut over as far down the trunk as was ſoft, and pliable, and was capable of being ſnapped off by one bite, without ſplitting or laceration; others, where the trunk was cut into laths or ribbands, ſome of which were ate in part, others prepared, but which had been left from ſatiety or apprehenſion of danger, a feaſt without labour for the next that ſhould find it. In ſome places we ſaw the trees all conſumed, but a ſtump that remained about a foot from the ground, and theſe were of the moſt ſucculent kind, and there we diſtinctly perceived the beginning of the firſt laceration from the bottom; and what, beſide the teſtimony of the hunters, confirmed this fact beyond doubt was, that in ſeveral places large pieces of the teeth of elephants, and horns of the rhinoceros were brought to us, partly found lying on the ground at the foot of theſe trees, and part ſticking in them.

Neither the elephant nor rhinoceros eat graſs; if their food depended upon that, many times in the year they muſt be reduced

reduced to a ſtate of ſtarving, for the graſs is naturally parched up in ſome ſeaſons, and at others burnt purpoſely by the Shangalla. It is true, that in Europe their chief food is hay; trees cannot be every day ſpoiled for them in the quantity they would need. But this is not their natural food, more than the ſugar and the aquavitæ that are given them here.

The roughneſs of the tongue of the rhinoceros is another matter in diſpute: it is ſaid to be ſo rough, that the animal with that can lick off the fleſh of a man's bones. Others ſay, the tongue is ſo ſoft that it reſembles that of a calf. Both of theſe are in ſome meaſure true, but aggravated by the reporters. The tongue of the young Rhinoceros is ſoft, for the ſkin is much tougher and thicker too, than that of a calf, and has apparently ſome furrows or wrinkles in it, but it has no puſtules nor rudiments of any that are diſcernible, nor indeed has any uſe for them. On the other hand, the tongue and inſide of the upper lip of the old Rhinoceros are very rough, and this appears to me to ariſe from the conſtant uſe he makes of theſe parts in ſeizing the branches of trees which have rough barks, particularly the acacia. It is, when purſued, and in fear, that we ſee he poſſeſſes an aſtoniſhing degree of ſwiftneſs, conſidering his ſize, the apparent unwieldyneſs of his body, his great weight before, and the ſhortneſs of his legs. He is long, and has a kind of trot, which, after a few minutes, increaſes in a great proportion, and takes in a great diſtance; but this is to be underſtood with a degree of moderation. It is not true, that in a plain he beats the horſe in ſwiftneſs. I have paſſed him with eaſe, and ſeen many worſe mounted do the ſame, and though it is certainly true, that a horſe

can very ſeldom come up with him, this is owing to his cunning, but not his ſwiftneſs. He makes conſtantly from wood to wood, and forces himſelf into the thickeſt part of them. The trees that are fruſh, or dry, are broke down, like as with a cannon ſhot, and fall behind him and on his ſide in all directions. Others that are more pliable, greener, or fuller of ſap, are bent back by his weight and velocity of his motion. And after he has paſſed, reſtoring themſelves like a green branch to their natural poſition, they ſweep the uncautious purſuer and his horſe from the ground, and daſh them in pieces againſt the ſurrounding trees.

The eyes of the Rhinoceros are very ſmall, and he ſeldom turns his head, and therefore ſees nothing but what is before him. To this he owes his death, and never eſcapes, if there is ſo much plain as to enable the horſe to get before him. His pride and fury, then, makes him lay aſide all thoughts of eſcaping but by victory over his enemy. He ſtands for a moment at bay, then, at a ſtart, runs ſtraight forward at the horſe, like the wild boar, whom in his manner of action he very much reſembles. The horſe eaſily avoids him, by turning ſhort to aſide, and this is the fatal inſtant: The naked man, with the ſword, drops from behind the principal horſeman, and unſeen by the Rhinoceros, who is ſeeking his enemy the horſe, he gives him a ſtroke acroſs the tendon of the heel, which renders him incapable of further flight or reſiſtance.

In ſpeaking of the great quantity of food neceſſary to ſupport this enormous maſs, we muſt likewiſe conſider the vaſt quantity of water which he needs. No country but that

that of the Shangalla, which he poſſeſſes, deluged with ſix months rains, and full of large and deep baſons, made in the living rock, and ſhaded by dark woods from evaporation; or watered by large and deep rivers, which never fall low or to a ſtate of dryneſs, can ſupply the vaſt draughts of this monſtrous creature; but it is not for drinking alone that he frequents wet and marſhy places; large, fierce, and ſtrong as he is, he muſt ſubmit to prepare to defend himſelf againſt the weakeſt of all adverſaries. The great conſumption he conſtantly makes of food and water neceſſarily confine him to certain limited ſpaces; for it is not every place that can maintain him, he cannot emigrate, or ſeek his defence among the ſands of Atbara.

The fly, that unremitting perſecutor of every animal that lives in the black earth, does not ſpare the rhinoceros, nor is afraid of his fierceneſs. He attacks him in the ſame manner as he does the camel, and would as eaſily ſubdue him, but for a ſtratagem which he practiſes for his preſervation. The time of the fly being the rainy ſeaſon, the whole black earth, as I have already obſerved, turns into mire. In the night when the fly is at reſt, he chooſes a convenient place, and there rolling himſelf in the mud, he clothes himſelf with a kind of caſe, which defends him againſt his adverſary the following day. The wrinkles and plaits of his ſkin ſerve to keep this muddy plaſter firm upon him, all but about his hips, ſhoulders, and legs, where it cracks and falls off by motion, and leaves him expoſed in thoſe places to the attacks of the fly. The itching and pain which follow occaſion him to rub himſelf in thoſe parts againſt the rougheſt trees, and this is at leaſt one cauſe of the puſtules

or tubercules which we ſee upon theſe places, both on the elephant and rhinoceros. The Count de Buffon, who believes theſe puſtules to be natural parts of the creature, ſays, in proof of this, that they have been found in the fœtus of a rhinoceros. I do not pretend to diſbelieve this; it may be, that theſe punctures happening to the old female at the time ſhe was with young, the impreſſion of her ſufferings might have appeared upon the young one. However this is, I cannot conceal that I have heard, not from hunters only, but men worthy of credit, that this is the origin of theſe protuberances; and many rhinoceroſes, ſlain in Abyſſinia, are known to have been found at the ſeaſon of the fly, with their ſhoulders and buttocks bloody and excoriated. It is likewiſe by no means true, that the ſkin of the rhinoceros is hard or impenetrable like a board. I ſhould rather ſuſpect this to be diſeaſe, or from a different habit acquired by keeping; for in his wild ſtate he is ſlain by javelins thrown from indifferent hands, which I have ſeen buried three feet in his body. A muſket ſhot will go through him if it meets not with the intervention of a bone; and the Shangalla kill him by the worſt and moſt inartificial arrows that ever were uſed by any people practiſing that weapon, and cut him to pieces afterwards with the very worſt of knives.

I HAVE ſaid that, in the evening, he goes to welter in the mire. He enjoys the rubbing himſelf there ſo much, and groans and grunts ſo loud, that he is heard at a conſiderable diſtance. The pleaſure that he receives from this enjoyment, and the darkneſs of the night, deprive him of his uſual vigilance and attention. The hunters, guided by his noiſe, ſteal ſecretly upon him, and, while lying on the ground,

ground, wound him with their javelins moſtly in the belly where the wound is mortal.

A SURGEON of the Shafteſbury Indiaman was the firſt who obſerved and mentioned a fact which has been raſhly enough declared a fable *. He obſerved on a rhinoceros newly taken, after having weltered and coated itſelf in mud, as above mentioned, ſeveral inſects, ſuch as millepides, or ſcolopendra, concealed under the ply of the ſkin. With all ſubmiſſion to my friend's cenſure, I do not think he is in this ſo right or candid as he uſually is; not having been out of his own country, at leaſt in any country where he could have ſeen a rhinoceros newly taken from weltering in the mud, he could not poſſibly be a judge of this fact as the officer of the Shafteſbury was, who ſaw the animal in that ſtate. Every one, I believe, have ſeen horſes and cows drinking in foul water ſeized by leeches, which have bled them exceſſively, and ſwelled under the animal's tongue to a monſtrous ſize. And I cannot ſay, with all ſubmiſſion to better judgment, that it is more contrary to the nature of things, that a leech ſhould ſeize an animal, whoſe cuſtom is to welter in water, than a fly bite and depoſit his eggs in a camel in the ſun-ſhine on land. But further I muſt bear this teſtimony, that, while at Ras el Feel, two of theſe animals were ſlain by the Ganjar hunters in the neighbourhood. I was not at the hunting, but, though ill of the flux, I went there on horſeback before they had ſcraped off their muddy covering. Under the plies of one I ſaw two or three very large worms, not carnivorous ones, but the common

* Vid. Buffon Hiſt. rhinoceros, p. 225. Edwards, p. 25. and 26.

large worm of the garden. I ſaw likewiſe ſeveral animals like earwigs, which I took for young ſcolopendræ, and two ſmall, white, land-ſnail ſhells. I ſought no further, but was told a number of different inſects were found, and ſome of them that ſucked the blood, which I take to be a kind of leech. There is then no ſort of reaſon to accuſe this gentleman of telling a falſehood, only becauſe he was a better obſerver, and had better opportunities than others have had, and it is indeed neither juſt nor decent; on the contrary, it is a coarſe manner of criticiſing, to tax a man with falſehood when he ſpeaks as an eye-witneſs, and has ſaid nothing phyſically impoſſible.

The rhinoceros ſhewn at the fair of St Germain, that which the Count de Buffon and Mr Edwards ſaw, kept clean in a ſtable for ſeveral years, I ſhall believe had neither worms nor ſcolopendræ upon it, neither does this officer of the Shafteſbury report it had; but he ſays, that one covered with mud, in which it had been weltering, had upon it animals that are commonly found in that mud; and this neither Mr Parſons nor Mr Edwards, nor the Count de Buffon, ever had an opportunity of verifying.

Chardin * ſays, that the Abyſſinians tame and train the rhinoceros to labour. This is an abſolute fable; beſides, that we have reaſon to believe the animal is not capable of inſtruction, neither hiſtory not tradition ever gave the ſmalleſt reaſon to make us believe this, nor is there any motive for attempting the experiment, more than for believing

* Chardin, tom. iii. p. 45.

ving it ever was accompliſhed. Tractable as the elephant, is, the Abyſſinians never either tamed or inſtructed him; they never made uſe of beaſts in war, nor would their country permit this training; ſo much the contrary, as we have already ſeen, that Ptolemy Philadelphus, and his ſucceſſor Ptolemy Evergetes, did every thing in their power to perſuade them to take the elephant alive, that they might tame them; but, as he was a principal part of their food, they never could ſucceed; and the latter prince, for this very purpoſe, made an expedition into Abyſſinia, and was obliged to extirpate theſe hunters, and ſettle in their place a colony of his own at Arkeeko near Maſuah, which he called Ptolemais Theron for that very reaſon; after which, he himſelf tells us in the long Greek inſcription he left in the kingdom of Adel, that he had ſucceeded ſo far, by means of his colony of Greeks, as to train the Ethiopic elephant ſo as to make him ſuperior to thoſe in India; but this he could never do by employing Abyſſinians.

It is a general obſervation made in every part where this animal reſides, that he is indocile, and wants talents; his fierceneſs may be conquered, and we ſee, with a moderate degree of attention, he is brought to be quiet enough; but it is one thing to tame or conquer his fierceneſs, and another to make him capable of inſtruction; and it ſeems apparently allowed to be his caſe, that he has not capacity. A ſteady, uniform fierceneſs in the brute creation, is to be ſubdued by care and by hunger, this is not the caſe with him, his violent tranſports of fury upon being hungry, or not being ſerved in the inſtant with food, ſeems to bar this manner of taming him. His behaviour is not that of any other animal; his revenge and fury are directed as much againſt himſelf as againſt an enemy; he knocks his head

againſt

againſt the wall, or the manger, with a ſeeming intention to deſtroy himſelf, nay, he does deſtroy himſelf often. That ſent from India to Emanuel king of Portugal, in the year 1513, and by him preſented to the pope, was the cauſe the ſhip * that carried him was ſunk and loſt, and the one that was ſhewn in France purpoſely drowned itſelf going to Italy.

THE rhinoceros and the elephant are the principal food of the Shangalla. The manner of preparing the fleſh I have already deſcribed, and ſhall not repeat. He is ate too with great greedineſs by all the inhabitants of the low country, and Atbara. The moſt delicate part about him is ſuppoſed to be the ſoles of his feet, which are ſoft like thoſe of a camel, and of a griſtly ſubſtance; the reſt of the fleſh ſeems to reſemble that of the hog, but is much coarſer. It ſmells of muſk, and is otherwiſe very taſteleſs; I ſhould think it would be more ſo to the negroes and hunters, who eat it without ſalt. The only hair about it is at the tip of its tail; they are there few and ſcattered, but thick as the loweſt wire of a harpſichord; ten of theſe, faſtened ſide by ſide, at the diſtance of half an inch from each other, in the figure of a man's hand, make a whip which will bring the blood every ſtroke.

THIS rhinoceros was thirteen feet from the noſe to its anus; and very little leſs than ſeven feet when he ſtood, meaſuring from the ſole of his fore-foot to the top of the ſhoulder. The firſt horn was fourteen inches. The ſecond

* Tran. Philoſoph. No. 470.

ſomething leſs than thirteen inches. The flat part of the horn, where it was bare at its baſe, and diveſted of hair, was four inches, and the top two inches and a half broad. In the middle it was an inch and quarter thick; it was ſhaped like a knife; the back two inches, and, when turned, meaſured one fourth of an inch at the edge.

It ſeems now to be a point agreed upon by travellers and naturaliſts, that the famous animal, having one horn only upon his forehead, is the fanciful creation of poets and painters; to them I ſhould willingly leave it, but a Swediſh naturaliſt, Dr Sparman, who has lately publiſhed two volumes in quarto, in which he has diſtinguiſhed himſelf by his low illiberal abuſe of learned foreigners, as much as by the fulſome flattery he has beſtowed on his own countrymen, has ſhewed an inclination to revive this antiquated fable. I do not, for my own part, believe the authority will be thought ſufficient, or have many followers. The publiſher, by way of apology, as I ſuppoſe, for his ruſticity and ill-manners, ſays, that he was employed in labour to earn a ſufficient ſum upon which to travel. What labour he applied to is not ſaid; it was not a lucrative occupation ſurely, or the Doctor was not an able labourer, as the ſum produced was but 38 dollars, and I really think his knowledge acquired ſeem to be pretty much in proportion to his funds.

Kolbe mentions what would ſeem a variety of the rhinoceros at the Cape. He ſays it has one horn upon its noſe, and another upon his forehead. This the Count de Buffon thinks is untrue, and, from other circumſtances of the narrative, ſuppoſes that Kolbe never ſaw this rhinoceros, and has

has deſcribed it only from hearſay. Though this, too, is Doctor Sparman's opinion, yet, unwilling to let ſlip an opportunity of contradicting the Count de Buffon; he taxes it as an improper criticiſm upon this rhinoceros of Kolbe: he ſays the deſcription is a juſt one, and that a man of the Count's learning ſhould have known that the forehead and noſe of all animals were *near* each other. Although he has given a ſtrange drawing of the ſkeleton of the head of a rhinoceros, where the noſe and the forehead are very diſtinctly different, yet, in another drawing, he has figured his rhinoceros bicornis, with a head ſeemingly all noſe, and much liker an aſs than any thing we have ſeen pretended to be a rhinoceros ever ſince the time of Albert Durer. He pretends that, in his travels at the Cape, he ſaw an animal of this form, which had two horns upon his forehead, or his noſe, whichever he pleaſes to call them. If ſuch an animal does really exiſt, it is undoubtedly a new ſpecies; it has not the armour or plaited ſkin, ſeen in every rhinoceros till this time. He tells us a heap of wonderful ſtories about it, and claims the honour of being the firſt diſcoverer of it; and really, I believe, he is ſo far in the right, that if he can prove what he ſays to be true, there is no man that will pretend to diſpute this point with him. Beſides its having a ſkin without plaits, it has two horns on the forehead, ſo looſe that they claſh againſt one another, and make a noiſe when the animal is running: then he has one of theſe only that are moveable, which he turns to one ſide or the other when he chooſes to dig roots; an imagination ſcarcely poſſible, I think, to any one who has ever ſeen a rhinoceros. With theſe looſe and claſhing horns he diverts himſelf by throwing a man and horſe into the air; and, though but five feet high, at other times he throws a load-

Hyæna

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ed, covered waggon, drawn by two oxen, over hedges into the fields.

This rhinoceros very luckily is not carnivorous, for he is among the ſwifteſt of animals, and ſmells and ſcents people at a great diſtance; and yet, with all theſe advantages, though his conſtant occupation, according to Dr Sparman, ſeems to be hunting waggons and men alſo, he never was ſo ſucceſsful as to kill but one man, as far as was ever known.

HYÆNA.

THERE are few animals, whoſe hiſtory has paſſed under the conſideration of naturaliſts, that have given occaſion to ſo much confuſion and equivocation as the Hyæna has done. It began very early among the ancients, and the moderns have fully contributed their ſhare. It is not my intention to take up the reader's time with diſcuſſing the errors of others, whether ancient or modern. Without

out diſplaying a great deal of learning to tell him what it is not, I ſhall content myſelf with informing him what it is, by a good figure and diſtinct relation of what in his hiſtory hath been unknown, or omitted, and put it in the reader's power to reject any of the pretended Hyænas that authors or travellers ſhould endeavour to impoſe upon him. At the ſame time, I ſhall ſubmit to his deciſion, whether the animal I mention is a new one, or only a variety of the old, as it muſt on all hands be allowed that he is as yet undeſcribed.

Most of the animals confounded with him are about ſix times ſmaller than he is, and ſome there are that do not even uſe their four legs, but only two. The want of a critical knowledge in the Arabic language, and of natural hiſtory at the ſame time, has in ſome meaſure been the occaſion of this among the moderns. Bochart * diſcuſſes the ſeveral errors of the ancients with great judgment, and the Count de Buffon †, in a very elegant and pleaſant manner, hath nearly exhauſted the whole.

I do not think there is any one that hath hitherto written of this animal who ever ſaw the thouſandth part of them that I have. They were a plague in Abyſſinia in every ſituation, both in the city and in the field, and I think ſurpaſſed the ſheep in number. Gondar was full of them from the time it turned dark till the dawn of day, ſeeking the different pieces of ſlaughtered carcaſes which this cruel and

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* Boch. vol. I. cap. xxxiii. † Buffon vol. IX. 4to.

and unclean people expoſe in the ſtreets without burial, and who firmly believe that theſe animals are Falaſha from the neighbouring mountains, transformed by magic, and come down to eat human fleſh in the dark in ſafety. Many a time in the night, when the king had kept me late in the palace, and it was not my duty to lie there, in going acroſs the ſquare from the king's houſe, not many hundred yards diſtant, I have been apprehenſive they would bite me in the leg. They grunted in great numbers about me, though I was ſurrounded with ſeveral armed men, who ſeldom paſſed a night without wounding or ſlaughtering ſome of them.

One night in Maitſha, being very intent on obſervation, I heard ſomething paſs behind me towards the bed, but upon looking round could perceive nothing. Having finiſhed what I was then about, I went out of my tent, reſolving directly to return, which I immediately did, when I perceived large blue eyes glaring at me in the dark. I called upon my ſervant with a light, and there was the hyæna ſtanding nigh the head of the bed, with two or three large bunches of candles in his mouth. To have fired at him I was in danger of breaking my quadrant or other furniture, and he ſeemed, by keeping the candles ſteadily in his mouth, to wiſh for no other prey at that time. As his mouth was full, and he had no claws to tear with, I was not afraid of him, but with a pike ſtruck him as near the heart as I could judge. It was not till then he ſhewed any ſign of fierceneſs; but, upon feeling his wound, he let drop the candles, and endeavoured to run up the ſhaft of the ſpear to arrive at me, ſo that, in ſelf-defence, I was obliged to draw out a piſtol from my girdle and ſhoot him, and nearly at the ſame time my

ſervant cleft his ſkull with a battle-ax. In a word, the hyæna was the plague of our lives, the terror of our night-walks, the deſtruction of our mules and aſſes, which above all others are his favourite food. Many inſtances of this the reader will meet with throughout my Travels.

The hyæna is known by two names in the eaſt, Deeb and Dubbah. His proper name is Dubbah, and this is the name he goes by among the beſt Arabian naturaliſts. In Abyſſinia, Nubia, and part of Arabia, he is, both in writing and converſation, called Deeb, or Deep, either ending with a b or p; and here the confuſion begins, for though Dubbah is properly a hyæna, Dabbu is a ſpecies of monkey; and though Deeb is likewiſe a hyæna, the ſame word ſignifies a jackal; and a jackal being by naturaliſts called a wolf, Deeb is underſtood to be a wolf alſo. In Algiers this difference is preſerved ſtrictly; Dubbah is the hyæna; Deeb is the jackal, which run in flocks in the night, crying like hounds. Dubb is a bear, ſo here is another confuſion, and the bear is taken for the hyæna, becauſe Dubb, or Dubbah, ſeems to be the ſame word. So Poncet, on the frontiers of Sennaar, complains, that one of his mules was bit in the thigh by a bear, though it is well known there never was any animal of the bear-kind in that, or, I believe, in any other part of Africa. And I ſtrongly apprehend, that the leopards and tigers, which Alvarez and Don Roderigo de Lima mention moleſted them ſo much in their journey to Shoa, were nothing elſe but hyænas. For tigers there are certainly none in Abyſſinia; it is an Aſiatic animal. Though there are leopards, yet they are but few in number, and are not gregarious, neither, indeed, are the hyænas, only as they gather

gather in flocks, lured by the ſmell of their food; and of theſe it would ſeem there are many in Shoa, for the capital of that province, called Tegulat, means the City of the Hyæna.

If the deſcription given by M. de Buffon is an elegant and good one, the draught of the animal is no leſs ſo. It is exactly the ſame creature I have ſeen on Mount Libanus and at Aleppo, which makes me have the leſs doubt that there are two ſpecies of this animal, the one partaking more of the dog, which is the animal I am now deſcribing, the other more of the nature of the hog, which is the hyæna of M. de Buffon. Of this the reader will be eaſily ſatisfied, by comparing the two figures and the meaſures of them. The ſame diſtinction there is in the badger.

The animal from which this was drawn was ſlain at Teawa, and was the largeſt I had ever ſeen, being five feet nine inches in length, meaſuring from his noſe to his anus; whereas the hyæna exhibited by M. de Buffon was not half that, it being only three feet two inches nine lines in length. Notwithſtanding the great ſuperiority in ſize by which the hyæna of Atbara exceeded that of M. de Buffon, I did not think him remarkable for his fatneſs, or that he owed any of his ſize to his being at that time in more than ordinary keeping; on the contrary, I thought the moſt of thoſe I had before ſeen were in a better habit of body. As near as I could gueſs, he might weigh about 8 ſtone, horſeman's weight, that is, 14 pound to the ſtone, or 112 pound.

The length of his tail, from the longeſt hair in it to its inſertion above the anus, was one foot nine inches. It was compoſed

compoſed of ſtrong hair of a reddiſh, brown colour, without any rings or bands of blackneſs upon the points. In the ſame manner, the mane conſiſted of hairs exactly ſimilar both in colour and ſubſtance, being longer as they approached the neck, where they were about ſeven inches long; and though it was obvious that, upon being irritated, he could raiſe them upon his back, yet they were not rigid enough, and were too long to have the reſiſtance of briſtles of the hog or boar. This mane reached above two inches beyond the occiput between his ears, but then turned ſhort, and ended there.

From the occiput to his noſe he was one foot three inches and a half. The length of the noſe, from the bottom of the forehead, was five inches and a half, in ſhape much like that of a dog, the whole head, indeed, more ſo than that of the wolf or any other creature. The aperture of the eye was two inches nearly; that of the mouth, when not gaping or ſnarling, about four inches and a half. The ear, from its baſe to its extreme point, was nine inches and a quarter; it was moſtly bare, or covered with very thin, ſhort hair. From the inſide of one ear to that of the other, meaſured acroſs the forehead, was ſeven inches and a half. From the edge of the opening of one eye to that of the other, meaſured in the ſame manner, it was three inches nearly. From the ſole of the fore-foot, as it ſtood on the ground, to the top of the back above the ſhoulder, it was three feet ſeven inches; but his back was ſmooth and plain, not riſing or curved as the hyæna of M. de Buffon appears to have been. The fore-leg was two feet in length, the foot flat, and four inches broad. From the ſole of the foot to the middle of the fore joint was ſix inches and a half, and this

joint ſeemed to be ill-made, and as it were crooked and half bent. He has four toes, and a ſtraight nail between each of them, greatly reſembling that of a dog, ſtrong and black, but by no means calculated for tearing animals, and as little for digging, by which occupation he is ſaid chiefly to get his food.

He ſtands ill upon his hind-legs, nor can his meaſure there be marked with preciſion. It is obſervable in all hyænas, that when they are firſt diſlodged from cover, or obliged to run, they limp ſo remarkably that it would appear the hind-leg was broken, and this has often deceived me; but, after they have continued to run ſome time, this affection goes entirely away, and they move very ſwiftly. To what this is owing it is impoſſible for me to ſay. I expected to have found ſomething likely to be the origin of it in the diſſection of this animal given by M. de Buffon, but no ſuch thing appears, and I fear it is in vain to look for it elſewhere.

I apprehend from the ſole of his hind-foot to the joining of the thigh at his belly, was nearer two feet ſeven inches than any other meaſure. The belly is covered with hair very little ſofter and ſhorter than that of his back. It grows ſhorter as it approaches his hind-legs. His colour is of a yellowiſh brown, the head and ears the lighteſt part of him. The legs are marked thick with black bands which begin at the lower hinder joint, then continue very dark in colour till the top of the thigh, where they turn broad and circular, reaching acroſs the whole ſide. Over the ſhoulder are two ſemicircular bands likewiſe, then come very frequent bands down the outſide of the fore-leg in the ſame manner

manner as the hind. The inſide of all his legs are without marks, ſo are the neck, head, and ears, but a little above the thorax is a large black ſtreak which goes up along the throat, and down to the point of the lower jaw. His noſe is black, and above the point, for ſome inches, is of a dark colour alſo.

The Hyæna is one of thoſe animals which commentators have taken for the Saphan, without any probability whatever, further than he lives in caves, whither he retires in the ſummer to avoid being tormented with flies. Clement* of Alexandria introduces Moſes ſaying, You ſhall not eat the hare, nor the hyæna, as he interprets the word ſaphan; but the Hyæna does not chew the cud; they are not, as I ſay, gregarious, though they troop together upon the ſmell of food. We have no reaſon to attribute extraordinary wiſdom to him; he is on the contrary brutiſh, indolent, ſlovenly, and impudent, and ſeems to poſſeſs much the manners of the wolf. His courage appears to proceed from an inſatiable appetite, and has nothing of the brave or generous in it, and he dies oftener flying than fighting; but leaſt of all can it be ſaid of him that he is a *feeble folk*, being one of the ſtrongeſt beaſts of the field.

Upon the moſt attentive conſideration, the animal here repreſented ſeems to be of a different ſpecies from the hyæna of M. de Buffon. This of Atbara ſeems to be a dog, whereas the firſt ſight of the hyæna of M. de Buffon gives the idea of a hog, and this is the impreſſion it ſeems to have made upon

* Clem. Alexan. lib. ii. Pædagog. cap. 10.

the firſt travellers that deſcribe him. Kempfer * calls him Taxus Porcinus, and ſays he has briſtles like a hog.

We have an example of variety of this ſort in the badger. There is a ſow of that kind, and a dog. The dog is carnivorous, and the ſow lives upon vegetables, though both of them have been ſuſpected at times to eat and devour animal food.

The hyæna about Mount Libanus, Syria, the north of Aſia, and alſo about Algiers, is known to live for the moſt part upon large ſucculent, bulbous roots, eſpecially thoſe of the fritillaria, and ſuch large, fleſhy, vegetable ſubſtances. I have known large ſpaces of fields turned up to get at onions or roots of thoſe plants, and theſe were choſen with ſuch care, that, after having been peeled, they have been refuſed and left on the ground for a ſmall rotten ſpot being diſcovered in them. It will be obſerved the hyæna has no claws either for ſeizing or ſeparating animal food, that he might feed upon it, and I therefore imagine his primitive manner of living was rather upon vegetables than upon fleſh, as it is certain he ſtill continues his liking to the former; and I apprehend it is from an opportunity offering in a hungry time that he has ventured either upon man or beaſt, for few carnivorous animals, ſuch as lions, tigers, and wolves, ever feed upon both.

As to the charge againſt him of his diſturbing ſepulchres, I fancy it is rather ſuppoſed from his being unable

* Kemp. p. 411. and 412.

to ſeize his living prey that he is thought to attach himſelf to the dead. Upon much inquiry I never found one example fairly proved. The graves in the eaſt are built over with maſon-work; and though it is againſt the law of the Turks to repair theſe when they fall down, yet the body is probably conſumed long before that happens; nor is the hyæna provided with arms or weapons to attempt it in its entire ſtate; and the large plants and flowers, with fleſhy bulbous roots, are found generally in plenty among the graves.

But the hyæna of Atbara ſeems long to have abandoned his primitive food of roots, if that was ever his, and to have gone largely and undeniably into the ſlaughter of living creatures, eſpecially that of men. Indeed, happily for himſelf, he has adopted this ſuccedaneum; for as to roots or fruit of any kind, they are not to be found in the deſert country where he has choſen his domicil; and he has no difficulty from the ſepulchres, becauſe whole nations periſh without one of them being buried. Add to this, that the depravity of human nature, the anarchy and bad government of the country, have given him greater opportunities than anywhere elſe in the world to obtain frequent and eaſy victories over man.

It is a conſtant obſervation in Numidia, that the lion avoids and flies from the face of man, till by ſome accident they have been brought to engage, and the beaſt has prevailed againſt him; then that feeling of ſuperiority imprinted by the Creator in the heart of all animals for man's preſervation, ſeems to forſake him. The lion, having once taſted human blood, relinquiſhes the purſuit after the flock. He repairs

repairs to ſome high way or frequented path, and has been known, in the kingdom of Tunis, to interrupt the road to a market for ſeveral weeks; and in this he perſiſts till hunters or ſoldiers are ſent out to deſtroy him.

THE ſame, but in a much greater extent, happens in Atbara. The Arabs, the inhabitants of that country, live in encampments in different parts of the country, their ancient patrimony or conqueſt. Here they plow and ſow, dig wells, and have plenty of water; the ground produces large crops, and all is proſperity ſo long as there is peace. Inſolence and preſumption follow eaſe and riches. A quarrel happens with a neighbouring clan, and the firſt act of hoſtility, or deciſive advantage, is the one burning the others crop at the time when it is near being reaped. Inevitable famine follows; they are provided with no ſtores, no ſtock in hand, their houſes are burnt, their wells filled up, the men ſlain by their enemies, and many thouſands of the helpleſs remainder left perfectly deſtitute of neceſſaries; and that very ſpot, once a ſcene of plenty, in a few days is reduced to an abſolute deſert. Moſt of the miſerable ſurvivors die before they can reach the next water; they have no ſubſiſtence by the way; they wander among the acacia-trees, and gather gum. There, every day loſing their ſtrength, and deſtitute of all hope, they fall ſpontaneouſly, as it were, into the jaws of the mercileſs hyæna, who finding ſo very little difference or difficulty between ſlaying the living and devouring the dead, follows the miſerable remains of this unfortunate multitude, till he has extirpated the laſt individual of them. Thence it comes that we find it remarked in my return through the deſert, that the whole country is ſtrewed with bones of the dead; horrid

monuments of the victories of this ſavage animal, and of man more ſavage and cruel than he. From the eaſe with which he overcomes theſe half-ſtarved and unarmed people, ariſes the calm, ſteady confidence in which he ſurpaſſes all the reſt of his kind.

In Barbary I have ſeen the Moors in the day-time take this animal by the ears and pull him towards them, without his attempting any other reſiſtance than that of his drawing back: and the hunters, when his cave is large enough to give them admittance, take a torch in their hand, and go ſtraight to him; when, pretending to faſcinate him by a ſenſeleſs jargon of words which they repeat, they throw a blanket over him, and haul him out. He ſeems to be ſtupid or ſenſeleſs in the day, or at the appearance of ſtrong light, unleſs when purſued by the hunters.

I have locked up a goat, a kid, and a lamb with him all day when he was faſting, and found them in the evening alive and unhurt. Repeating the experiment one night, he ate up a young aſs, a goat, and a fox, all before morning, ſo as to leave nothing but ſome ſmall fragments of the aſs's bones.

In Barbary, then, he has no courage by day; he flies from man, and hides himſelf from him: But in Abyſſinia or Atbara, accuſtomed to man's fleſh, he walks boldly in the day-time like a horſe or mule, attacks man wherever he finds him, whether armed or unarmed, always attaching himſelf to the mule or aſs in preference to the rider. I may ſafely ſay, I ſpeak within bounds, that I have fought him above fifty times hand to hand, with a lance or ſpear, when

I had

I had fallen unexpectedly upon him among the tents, or in defence of my ſervants or beaſts. Abroad and at a diſtance the gun prevented his nearer approach; but in the night, evening, or morning, we were conſtantly in cloſe engagement with him.

This frequent victory over man, and his daily feeding upon him without reſiſtance, is that from which he ſurely draws his courage. Whether to this food it is that he owes his ſuperior ſize, I will not pronounce. For my own part, I conſider him as a variety of the ſame rather than another ſpecies. At the ſame time I muſt ſay, his form gave me diſtinctly the idea of a dog, without one feature or likeneſs of the hog, as was the caſe with the Syrian hyæna living on Mount Libanus, which is that of M. de Buffon, as plainly appears by his drawing.

I have oftentimes hinted in the courſe of my Travels at the liking he has for mules and aſſes; but there is another paſſion for which he is ſtill more remarkable, that is, his liking to dog's fleſh, or, as it is commonly expreſſed, his averſion to dogs. No dog, however fierce, will touch him in the field. My greyhounds, accuſtomed to faſten upon the wild boar, would not venture to engage with him. On the contrary, there was not a journey I made that he did not kill ſeveral of my greyhounds, and once or twice robbed me of my whole ſtock: he would ſeek and ſeize them in the ſervants tents where they were tied, and endeavour to carry them away before the very people that were guarding them.

This

This animoſity between him and dogs, though it has eſcaped modern naturaliſts, appears to have been known to the ancients in the eaſt. In Eccleſiaſticus (chap. xiii. ver. 18.) it is ſaid, "What agreement is there between the hyæna and the dog?" a ſufficient proof that the antipathy was ſo well known as to be proverbial.

And I muſt here obſerve, that if there is any preciſion in the definition of Linnæus, this animal does not anſwer to it, either in the cauda recta or annulata, for he never carries his tail erect, but always cloſe behind him like a dog when afraid, or unleſs when he is in full ſpeed; nor is the figure given by M. de Buffon marked like the hyæna of Atbara, though, as have I ſaid, perfectly reſembling that of Syria, and the figure I have here given has, I believe, ſcarcely a hair miſplaced in it. Upon the whole, I ſubmit this entirely to my reader, being ſatisfied with having, I hope, fully proved what was the intent of this diſſertation, that the ſaphan is not the hyæna, as Greek commentators upon the ſcripture have imagined.

JERBOA.

Jerboa.

Heath Sc.

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JERBOA.

I HAVE already obſerved that the Arabs have confounded the Saphan with ſeveral other animals that have no ſort of reſemblace to it; there are two of theſe very remarkable, the Fennec and Jerboa, of which I am now to treat. As I have given excellent figures of both, by drawings taken from the creatures alive, I have no doubt I ſhall prevent any confuſion for the future, and throw ſome light upon ſacred ſcripture, the greateſt profit and uſe that can reſult from this ſort of writing.

If the rabbit has been frequently confounded with the ſaphan, and ſtood for it in the interpretation of the Hebrew text, the ſame has likewiſe happened to another animal, the Jerboa, ſtill more diſſimilar in form and in manners from the ſaphan, than even the rabbit itſelf, and much leſs known. The Jerboa is a ſmall harmleſs animal of the deſert, nearly the ſize of a common rat: the ſkin very ſmooth and ſhining, of a brown tinged with yellow or gold colour, and the ends of the hairs tipt with black. It lives in the ſmootheſt plains or places of the deſert, eſpecially where the ſoil is fixed gra-

vel, for in that chiefly it burrows, dividing its hole below into many manſions. It ſeems to be apprehenſive of the falling in of the ground; it therefore generally digs its hole under the root of ſome ſpurge, thyme, or abſinthium, upon whoſe root it ſeems to depend for its roof not falling in and burying it in the ruins of its ſubterraneous habitation. It ſeems to delight moſt in thoſe places that are haunted by the ceraſtes, or horned viper. Nature has certainly impoſed this dangerous neighbourhood upon the one for the good and advantage of the other, and that of mankind in general. Of the many trials I made, I never found a Jerboa in the body of a viper, excepting once in that of a female big with young, and the Jerboa itſelf was then nearly conſumed.

The Jerboa, for the moſt part, ſtands upon his hind-legs; he reſts himſelf by ſitting backwards ſometimes, and I have ſeen him, though rarely, as it were lie upon all four; whether that is from fatigue or ſickneſs, or whether it is a natural poſture, I know not. The Jerboa of the Cyrenaicum is ſix inches and a quarter in length, as he ſtands in the drawing. He would be full half an inch more if he was laid ſtraight at his length immediately after death. The head, from his noſe to the occiput, is one inch two lines. From the noſe to the foremoſt angle of the eye, ſix lines. The opening of the eye itſelf is two lines and a quarter; his ears three quarters of an inch in length, and a quarter of an inch in breadth; they are ſmooth, and have no hair within, and but very little without; of an equal breadth from bottom to top, do not diminiſh to a point, but are rounded there. The buttocks are marked with a ſemicircle of black, which parts from the root of the tail, and ends at the top of the thigh. This gives it the air of a compound

animal, a rat with bird's legs, to which the flying poſture ſtill adds reſemblance. From this ſtroke to the center of the eye is three inches, and to the point of his toe the ſame meaſure; his tail is ſix inches and a quarter long, ſeems aukwardly ſet on, as ſtuck between his buttocks, without any connection with his ſpine; half of it is poorly covered with hair of a light or whiter colour than his body; the other half is a beautiful feather of long hair, the middle white, the edges jet black: this tail, which by its length would ſeem an incumbrance to him, is of a ſurpriſing advantage in guiding and directing him in his jumping.

From the ſhoulder to the elbow of the fore-foot is half an inch: from the elbow to the joining of the paw, $\frac{4}{5}$ths of an inch. The claw itſelf is curved, and is ſomething leſs than a quarter of an inch. It has very long muſtachoes, ſome of them ſtanding backward, and ſome of them forward from his noſe; they are all of unequal lengths, the longeſt an inch and a half; his belly is white: he ſeems to be of a very cleanly nature, his hair always in great order. From his ſnout to the back part of the opening of the mouth is half an inch; his noſe projects beyond his under jaw three quarters of an inch. He has four toes in his hind-foot, and a ſmall one behind his heel, where is a tuft of hair coloured black. The fore-foot hath three toes only.

The ancients have early deſcribed this animal; we ſee him in ſome of the firſt medals of the Cyrenaicum, ſitting under an umbellated plant, ſuppoſed to be the ſilphium, whoſe figure is preſerved to us on the ſilver medals of Cyrene. The high price ſet upon it is mentioned by ſeveral hiſto-

rians, but the reaſon of that value, or the uſe of the plant, I have never yet been able to comprehend. I ſuppoſe it was an adventitious plant, which the curioſity and correſpondence of the princes of that ſtate had probably brought from ſome part of Negroland, where the goats are brouſing upon it at this day with indifference enough, unconſcious of the price it bore in the time of the Ptolemies.

Herodotus *, Theophraſtus †, and Ariſtotle ‡, all mention this animal under the name of διπυς, γαλαι διποδες, or, two-footed rats. This animal is found in moſt of the parts of Arabia and Syria, in every part of the ſouthern deſerts of Africa, but no where ſo frequently, and in ſuch numbers, as in the Cyrenaicum, or Pentapolis. In my unfortunate journey there, I employed the Arabs, together with my ſervants, to kill a number with ſticks, ſo as that the ſkins might not be injured by ſhot. I got them dreſſed in Syria and in Greece, and ſewed together, making uſe of the tail as in ermine for the lining of a cloak, and they had a very good effect; the longer they wore, the gloſſier and finer appearance the ſkins made. The Jerboa is very fat and well-coloured; the buttocks, thighs, and part of the back, are roaſted and ate by the Arabs. I have eaten them; they are not diſtinguiſhable from a young rabbit either in colour or taſte; they have not even the ſtrong taſte the rabbit has. Some writers have confounded theſe two animals together; at leaſt they have miſtaken this for the

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* Herod. Melp. ſect. 192. † Theoph. apud Elian. Hiſt. Anim. lib. xv. cap. 26.
‡ Ariſt. de Mareb. Egypt. lib. vi.

the ſaphan, and the ſaphan for the rabbit. This, however, is plainly without foundation. Theſe long legs, and the neceſſity of leaping, demand the plain ground, where nature has always placed this creature.

The Arabs Ibn Bitar, Algiahid, Alcamus, and Damir, and many others, have known the animal perfectly, though ſome of them ſeem to confound it with another called the Aſhkoko. Ibnalgiauzi ſays, that the Jerboa is the only kind that builds in rocks, which from ten thouſand examples I am ſure he does not, nor is he any way made for it, and I am very certain he is not gregarious. They have a number of holes indeed in the ſame place, but I do not remember ever to have ſeen more than two together at a time. The Arab Canoniſts are divided whether or not he can be lawfully eaten. Ibnalgiauzi is of opinion he cannot, nor any other animal living under the ground, excepting the land crocodile, which he calls El Dabb, a large lizard, ſaid to be uſeful in venereal purſuits. Ata and Achmet, Benhantal, and ſeveral others, expreſsly ſay, that the eating of the Jerboa is lawful. But this ſeems to be an indulgence, as we read in Damir, that the uſe of this animal is granted becauſe the Arabs delight in it. And Ibn Bitar ſays, that the Jerboa is called Iſraelitiſh, that the fleſh of it is dried in the outward air, is very nouriſhing, and prevents coſtiveneſs, from which we ſhould apprehend, that medicinal conſiderations entered into this permiſſion likewiſe. However this may be, it ſeems to me plain, ſuch was not the opinion of the old tranſlators of the Arab verſion from the Hebrew; they once only name this animal expreſsly, and there they ſay it is forbidden. The paſſage is in Iſaiah, "They that ſanc-" tify themſelves and purify themſelves in the gardens " behind one tree in the midſt, eating ſwine's fleſh,

" and the abomination, and the mouſe, ſhall be conſumed " together, ſaith the Lord *." The Hebrew word ſignifies mouſe, and ſo our Engliſh tranſlation renders it. But the Arabic verſion calls it expreſsly the Jerboa, and claſſes it with the abomination and ſwine's fleſh, that is, in the claſs of things in the higheſt degree forbidden.

THERE is little variety in this animal either in ſize or colour, in the wide range that they inhabit. Towards Aleppo they have broader noſes than the African ones, their bodies alſo thicker, and their colour lighter; a thing we always ſee in the Syrian animals, compared to the African. The firſt of theſe I ſaw was in London, in the hands of Dr Ruſſel, who has wrote the hiſtory of Aleppo, of whom I have before made mention. Haym publiſhed an account of the Jerboa, ſo does Dr Shaw, but there exiſts not, that I know, one good figure of him, or particular deſcription.

THE figure given us by Edwards is thick and ſhort, out of all proportion. His legs are too ſhort, his feet too large, he wants the black mark upon his heel, the nails of his fore-feet are greatly too long, and there is certainly a latitude taken in the deſcription, when his head is ſaid very much to reſemble that of a rabbit. Dr Haſſelquiſt has given us a kind of deſcription of him without a figure. He ſays the Arabs call him Garbuka, but this is not ſo, he goes by no other name in all the eaſt, but that of Jerboa, only the letter J, ſometimes by being pronounced Y, for Jerboa he is called Yerboa, and this is the only variation in name.

THE

* Iſaiah, chap. lxvi. ver. 17.

The Arabs of the kingdom of Tripoli make very good diverſion with the Jerboa, in training their grey-hounds, which they employ to hunt the gazel or antelope after inſtructing him to turn nimbly by hunting this animal. The prince of Tunis, ſon of Sidi Younis, and grandſon of Ali Bey, who had been ſtrangled by the Algerines when that capital was taken, being then in exile at Algiers, made me a preſent of a ſmall grey-hound, which often gave us excellent ſport. It may be perhaps imagined a chace between theſe two creatures could not be long, yet I have often ſeen, in a large incloſure, or court-yard, the greyhound employ a quarter of an hour before he could maſter his nimble adverſary; the ſmall ſize of the creature aſſiſted him much, and had not the greyhound been a practiſed one, and made uſe of his feet as well as his teeth, he might have killed two antelopes in the time he could have killed one Jerboa.

It is the character of the ſaphan given in ſcripture, that he is gregarious, that he lives in houſes made in the rock, that he is diſtinguiſhed for his feebleneſs, which he ſupplies by his wiſdom: none of theſe characteriſtics agree with the Jerboa, and therefore though he chews the cud in common with ſome others, and was in great plenty in Judea, ſo as to be known by Solomon, yet he cannot be the ſaphan of the ſcripture.

FENNEC.

FENNEC.

THIS beautiful animal, which has lately ſo much excited the curioſity, and exerciſed the pens rather than the judgment of ſome naturaliſts, was brought to me at Algiers by Mahomet Rais, my drugoman or janizary, while conſul-general to his Majeſty in that regency.

MAHOMET Rais bought it for two ſequins from an acquaintance, a Turkiſh oldaſh, or foot-ſoldier, juſt then returned from Biſcara, a ſouthern diſtrict of Mauritania Cæſarienſis, now called the Province of Conſtantina. The ſoldier ſaid they were not uncommon in Biſcara, but more frequently met with in the neighbouring date territories of Beni Mezzab and Werglah, the ancient habitations of the Melano-Gætuli; in the laſt mentioned of which places they hunted them for their ſkins, which they ſent by the caravan to

Fennec

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Heath Sc.

ſell at Mecca, and from whence they were after exported to India. He ſaid that he had endeavoured to bring three of them, two of which had eſcaped by gnawing holes in the cage. I kept this for ſeveral months at my country-houſe near Algiers, that I might learn its manners. I made ſeveral drawings of it, particularly one in water-colours of its natural ſize, which has been the original of all thoſe bad copies that have ſince appeared. Having ſatisfied myſelf of all particulars concerning it, and being about to leave Algiers, I made a preſent of him to Captain Cleveland, of his majeſty's ſhip Phœnix, then in that port, and he gave him to Mr Brander, Swediſh conſul in Algiers. A young man, Balugani, of whom I have already ſpoken, then in my ſervice, in which, indeed, he died, allowed himſelf ſo far to be ſurpriſed, as, unknown to me, to trace upon oiled paper a copy of this drawing in water-colours, juſt now mentioned. This he did ſo ſervilely, that it could not be miſtaken, and was therefore, as often as it appeared, known to be a copy by people* the leaſt qualified to judge in theſe matters. The affectation of the poſture in which it was ſitting, the extraordinary breadth of its feet, the unnatural curve of the tail, to ſhew the black part of it, the affected manner of diſpoſing its ears, were all purpoſely done, to ſhew particular details that I was to deſcribe, after the animal itſelf ſhould be loſt, or its figure, through length of time, ſhould be leſs freſh in my memory.

Doctor Sparman, with his natural dullneſs, and a diſingenioufneſs which ſeems partly natural, partly acquired, and

* Sparman, vol. II. p. 186.

and improved by conſtant plagiariſms, from the works of others, pretends in favour of his country and countrymen, to ſteal this into a Swediſh diſcovery. He ſays that Mr Brander has publiſhed an account of it in ſome Swediſh tranſactions, a book I never ſaw, but that being long importuned by his friend Mr Nicander, to give the figure of the animal itſelf to be publiſhed, he conſtantly refuſed it.

Whether this fact is ſo or not, I do not pretend to give my opinion: if it is, I cannot but think Mr Brander's conduct in both caſes was extremely proper. The creature itſelf paſſed, by very fair means, from my poſſeſſion into Mr Brander's, who cannot doubt that I would have given it to him in preference to Mr Cleveland, if I had known he thought it of the leaſt conſequence; he was then, as having had the animal by juſt means in his poſſeſſion, as much entitled to deſcribe him as I was; or as the Turk, the prior poſſeſſor, who gave him to me, had he been capable, and ſo inclined. On the other hand, Mr Brander likewiſe judged very properly in refuſing to publiſh the drawing at the requeſt of Mr Nicander. The drawing was not juſtly acquired, as it was obtained by a breach of faith, and ſeduction of a ſervant, which might have coſt him his bread. It was conducted with a privacy ſeldom thought neceſſary to fair dealing, nor was it ever known to me, till the young man began to be dangerouſly ſick at Tunis, when he declared it voluntarily to me, with a contrition, that might have atoned for a much greater breach of duty.

Dr Sparman attempts to conceal theſe circumſtances. He ſays Mr Brander told him, that I ſaw this animal at Algiers, and that I employed the ſame painter that he did to make

the drawing of him, and ſpeaks of a painter found at Algiers as readily as if he had been at the gates of Rome or Naples. Theſe are the wretched ſubterfuges of low minds, as diſtant from ſcience as they are from honour and virtue. Why, if the animal was equally known to Mr Brander and me, did he not, when writing upon it, give his name, his manners, the uſes to which he was deſtined, and the places where he reſided? why ſend to Algiers for an account of him, after having him ſo long in his poſſeſſion, ſince at Algiers he was probably as great a ſtranger as he was at Stockholm? why call him a fox, or pronounce his genus, yet write to Algiers for particulars to decide what that genus was?

The Count of Buffon *, content with the merit of his own works, without ſeeking praiſe from ſcraps of information picked up at random from the reports of others, declares candidly, that he believes this animal to be as yet anonyme, that is, not to have a name, and in this, as in other reſpects, to be perfectly unknown. If thoſe that have written concerning it had ſtopt here likewiſe, perhaps the loſs the public would have ſuffered by wanting their obſervations would not have been accounted a great detriment to natural hiſtory.

Mr Pennant †, from Mr Brander's calling it a fox, has taken occaſion to declare that his genus is a dog. Mr Sparman, that he may contribute his mite, attacks the deſcription which I gave of this animal in a converſation with

* Supplement to Tom. iii. p. 148. † Vol. I. p. 248.

the Count de Buffon at Paris. He declares I am miſtaken by ſaying that it lives on trees *; for in conſequence, I ſuppoſe, of its being a fox, he ſays it burrows in the ground, which, I doubt very much, he never ſaw an African fox do. His reaſon for this is, that there is a ſmall animal which lives in the ſands at Camdebo, near the Cape of Good Hope, which is roſe-coloured, and he believes it to be the animal in queſtion, for he once hunted it till it eſcaped by burrowing under ground, but he did not remark or diſtinguiſh his ears †.

I DO really believe there may be many ſmall animals found at Camdebo, as well as in all the other ſands of Africa; but having ſeen the reſt of this creature during the whole time of a chace, without remarking his ears, which are his great characteriſtic, is a proof that Dr Sparman is either miſtaken in the beaſt itſelf, or elſe that he is an unfortunate and inaccurate obſerver. There is but one other animal that has ears more conſpicuous or diſproportioned than this we are now ſpeaking of. I need not name him to a man of the profeſſor's learning. The Doctor goes on in a further deſcription of this animal that he had never ſeen. He ſays his name is Zerda, which I ſuppoſe is the ſweeteſt tranſlation of the Arabic word Jerd, or Jerda. But here Dr Sparman has been again unlucky in his choice, for, beſides many other differences, the Jerd, which is an animal well known both in Africa and Arabia, has no tail, but this perhaps is but another inſtance of the Doctor's ill fortune; in the

* Sparman's voyage to the Cape, vol. ii. p. 185. † P. 185.

the firſt caſe, he overlooked this animal's ears; in the ſecond, he did not perceive that he had a tail.

THE Arabs who conquered Egypt, and very ſoon after the reſt of Africa, the tyranny and fanatical ignorance of the Khalifat of Omar being overpaſt, became all at once excellent obſervers. They addicted themſelves with wonderful application to all ſorts of ſcience; they became very ſkilful phyſicians, aſtronomers, and mathematicians; they applied in a particular manner, and with great ſucceſs, to natural hiſtory, and being much better acquainted with their country than we are, they were, in an eſpecial manner, curious in the accounts of its productions. They paid great attention in particular to the animals whoſe figures and parts are deſcribed in the many books they have left us, as alſo their properties, manners, their uſes in medicine and commerce, are ſet down as diſtinctly and plainly as words alone could do. Their religion forbade them the uſe of drawing; this is the ſource of the confuſion that has happened, and this is the only advantage we have over them.

I BELIEVE there are very few remarkable animals, either in Africa or Arabia, that are not ſtill to be found deſcribed in ſome Arabian author, and it is doing the public little ſervice, when, from vanity, we ſubſtitute crude imaginations of our own in place of the obſervations of men, who were natives of the country, in perpetual uſe of ſeeing, as living with the animals which they deſcribed. There cannot, I think, be a ſtronger inſtance of this, than in the ſubject now before us; notwithſtanding what has been as confidently as ignorantly aſſerted, I will venture to affirm, that this animal, ſo far from being *unknown*, is particularly deſcribed in all

the Arabian books; neither is he without a name; he has one by which he invariably paſſes in every part of Africa, where he exiſts, which in all probability he has enjoyed as long as the lion or the tiger have theirs. He is white, and not roſe-coloured*; he does not burrow in the earth, but lives upon trees; he is not the jerda, but has a tail, and his genus is not a dog, for he is no fox. Here is a troop of errors on one ſubject, that would give any man a ſurfeit of modern deſcription, all ariſing from conceit, the *cacoethes ſcribendi*, too great love of writing, without having been at the pains to gain a ſufficient knowledge of the ſubject by fair inquiry and a very little reading.

The name of this quadruped all over Africa is El Fennec; ſuch was the name of that I firſt ſaw at Algiers; ſuch it is called in the many Arabian books that have deſcribed it. But this name, having no obvious ſignification in Arabic, its derivation has given riſe to many ill-founded gueſſes, and laid it open to the conjectures of grammarians who were not naturaliſts. Gollius ſays, it is a weaſel, and ſo ſay all the Arabians. He calls it *muſtela fœnaria*, the hay weaſel, from fœnum, hay, that being the materials of which he builds his neſt. But this derivation cannot be admitted, for there is no ſuch thing known as hay in the country where the Fennec reſides. But ſuppoſing that the dry graſs in all countries may be called hay, ſtill fœnum, a Latin word, would not be that which would expreſs it in Africa. But when we conſider that long before, and ever after Alexander's conqueſt, down as low as the tenth century, the language

* Sparman, vol. II. p. 185.

guage of theſe countries behind Egypt was chiefly Greek, an etymology much more natural and characteriſtic will preſent itſelf in the word φοινιξ, a palm tree, whence comes phœnicus, adjective, of or belonging to the palm or date-tree.

GABRIEL SIONITA * ſays, the Fennec is a white weaſel that lives in Sylvis Nigrorum, that is, in the woods of the Melano-Gætuli, where indeed no other tree grows but the palm-tree, and this juſt lands us in the place from which the Fennec was brought to me at Algiers, in Biſcara, Beni-Mezzab, and Werglah. It will be obſerved, that he does not ſay it is an animal of Nigritia; for that country being within the tropical rains, many other trees grow beſides the palm, and there the date does not ripen; and by its very thin hair, and fine ſkin, this creature is known at firſt ſight to belong to a dry, warm climate. But to leave no ſort of doubt, he calls him Gætulicus, which ſhews preciſely what country he means. There, in the high palm-trees, of which this country is full, he writes, the Fennec builds its neſt, and brings up its young. Giggeius tells us, that their ſkins are made uſe of for fine peliſſes; Ibn Beitar, that quantities of this fur is brought from the interior parts of Africa, and Damir and Razi ſay, that their ſkins are uſed for ſummer peliſſes †.

AFTER leaving Algiers I met with another Fennec at Tunis;

* Clem. 1. part 1.

† Vid. Epiſt. J. Caii, Angli ad Geſnerum.

nis; it had come laſt from the iſland of Gerba *, and had been brought there by the caravan of Gadems, or Fezzan. I bought one at Sennaar, from whence it came I know not. I kept it a conſiderable time in a cage, till finding it was no longer ſafe for me to ſtay at Sennaar, I truſted it by way of depoſit in the hands of a man whom it was neceſſary to deceive, with the expectation that I was to return, and only going for a few days to the camp of Shekh Adelan. It was known by Mahomet Towaſh, and ſeveral people at Sennaar, to be frequently carried to Cairo, and to Mecca, with paroquets, and ſuch curioſities which are brought by the great caravan from the Niger which traverſes the dreary deſert of Selima, and takes the date villages in its way eaſtward.

All theſe animals found at ſeparate times did exactly reſemble the firſt one ſeen at Algiers. They were all known by the name of Fennec, and no other, and ſaid to inhabit the date villages, where they built their neſts upon trees perfectly conformable to what the Arabian authors, whether naturaliſts or hiſtorians, had ſaid of them.

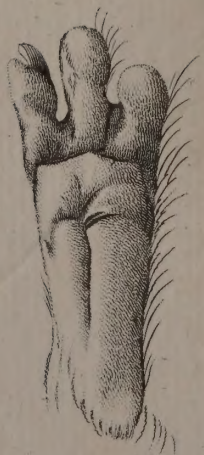
Though his favourite food ſeemed to be dates or any ſweet fruit, yet I obſerved he was very fond of eggs: pigeons eggs, and ſmall birds eggs, were firſt brought him, which he devoured with great avidity; but he did not ſeem to know how to manage the egg of a hen, but when broke for him, he ate it with the ſame voracity as the others. When he was hungry, he would eat bread, eſpecially with honey or

* Meninx Ins.

or ſugar. It was very obſervable that a bird, whether confined in a cage near him, or flying acroſs the room, engroſſed his whole attention. He followed it with his eyes whereever it went, nor was he at this time to be diverted by placing biſcuit before him, and it was obvious, by the great intereſt he ſeemed to take in its motions, that he was accuſtomed to watch for victories over it, either for his pleaſure or his food. He ſeemed very much alarmed at the approach of a cat, and endeavoured to hide himſelf, but ſhewed no ſymptom of preparing for any defence. I never heard he had any voice; he ſuffered himſelf, not without ſome difficulty, to be handled in the day when he ſeemed rather inclined to ſleep, but was exceedingly unquiet and reſtleſs ſo ſoon as night came, and always endeavouring his eſcape, and though he did not attempt the wire, yet with his ſharp teeth he very ſoon maſtered the wood of any common bird-cage.

From the ſnout to the anus he was about ten inches long, his tail five inches and a quarter, near an inch on the tip of it was black. From the point of his fore-ſhoulder to the point of his fore-toe, was two inches and $\frac{7}{8}$ths. He was two inches and a half from his occiput to the point of his noſe, the length of his ears three inches and $\frac{3}{8}$ths. Theſe were doubled, or had a plait on the bottom on the outſide; the border of his ears in the inſide were thick-covered with ſoft white hair, but the middle part was bare, and of a pink or roſe colour. They were about an inch and a half broad, and the cavities within very large. It was very difficult to meaſure theſe, for he was very impatient at having his ears touched, and always kept them erect, unleſs when terrified by a cat. The pupil of his eye was large

and black, ſurrounded by a deep blue iris. He had ſtrong, thick muſtachoes; the tip of his noſe very ſharp, black, and poliſhed. His upper jaw reached beyond the lower, and had four grinders on each ſide of the mouth. It has ſix fore-teeth in each jaw. Thoſe in the under jaw are ſmaller than the upper. The canine, or cutting teeth, are long, large, and exceedingly pointed. His legs are ſmall, and his feet very broad; he has four toes armed with crooked, black, ſharp claws; thoſe on his fore-feet more crooked and ſharp than behind. All his body is nearly of a dirty white, bordering on cream colour; the hair of his belly rather whiter, ſofter, and longer than the reſt, and on it a number of paps, but he was ſo impatient it was impoſſible to count them. He very ſeldom extended or ſtiffened his tail, the hair of which was harder. He had a very ſly and wily appearance. But as he is a ſolitary animal, and not gregarious, as he has no particular mark of feebleneſs about him, no ſhift or particular cunning which might occaſion Solomon to qualify him as wiſe; as he builds his neſt upon trees, and not on the rock, he cannot be the ſaphan of the ſcripture, as ſome, both Jews and Arabians, not ſufficiently attentive to the qualities attributed to that animal, have nevertheleſs erroneouſly imagined.



Ashkoko.

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ASHKOKO.

THIS curious animal is found in Ethiopia, in the caverns of the rocks, or under the great ſtones in the Mountain of the Sun, behind the queen's palace at Koſcam. It is alſo frequent in the deep caverns in the rock in many other places in Abyſſinia. It does not burrow, or make holes, as the rat and rabbit, nature having interdicted him this practice by furniſhing him with feet, the toes of which are perfectly round, and of a ſoft, pulpy, tender ſubſtance; the fleſhy parts of the toes project beyond the nails, which are rather broad than ſharp, much ſimilar to a man's nails ill grown, and theſe appear rather given him for the defence of his ſoft toes, than for any active uſe in digging, to which they are by no means adapted.

His hind foot is long and narrow, divided with two deep wrinkles, or clefts, in the middle, drawn acroſs the centre, on each ſide of which the fleſh riſes with conſiderable protuberancy, and it is terminated by three claws, the middle one is the longeſt. The forefoot has four toes, three diſpo-

ſed in the ſame proportion as the hind foot; the fourth, the largeſt of the whole, is placed lower down on the ſide of the foot, ſo that the top of it arrives no farther than the bottom of the toe next to it. The ſole of the foot is divided in the centre by deep clefts, like the other, and this cleft reaches down to the heel, which it nearly divides. The whole of the forefoot is very thick, fleſhy, and ſoft, and of a deep black colour, altogether void of hair, though the back, or upper part of it, is thick-covered like the reſt of its body, down to where the toes divide, there the hair ends, ſo that theſe long round toes very much reſemble the fingers of a man.

In place of holes, it ſeems to delight in leſs cloſe, or more airy places, in the mouths of caves, or clefts in the rock, or where one projecting, and being open before, affords a long retreat under it, without fear that this can ever be removed by the ſtrength or operations of man. The Aſhkoko are gregarious, and frequently ſeveral dozens of them ſit upon the great ſtones at the mouth of caves, and warm themſelves in the ſun, or even come out and enjoy the freſhneſs of the ſummer evening. They do not ſtand upright upon their feet, but ſeem to ſteal along as in fear, their belly being nearly cloſe to the ground, advancing a few ſteps at a time, and then pauſing. They have ſomething very mild, feeble like, and timid in their deportment; are gentle and eaſily tamed, though, when roughly handled at the firſt, they bite very ſeverely.

This animal is found plentifully on Mount Libanus. I have ſeen him alſo among the rocks at the Pharan Promon-

torium, or Cape Mahomet, which divides the Elanitic from the Heroopolitic Gulf, or Gulf of Suez. In all places they ſeem to be the ſame, if there is any difference it is in favour of the ſize and fatneſs, which thoſe in the Mountain of the Sun ſeem to enjoy above the others. What is his food I cannot determine with any degree of certainty. When in my poſſeſſion, he ate bread and milk, and ſeemed rather to be a moderate than voracious feeder. I ſuppoſe he lives upon grain, fruit, and roots. He ſeemed too timid and backward in his own nature to feed upon living food, or catch it by hunting.

The total length of this animal as he ſits, from the point of his noſe to his anus, is 17 inches and a quarter. The length of his ſnout, from the extremity of the noſe to the occiput, is 3 inches and $\frac{3}{8}$ths. His upper jaw is longer than his under; his noſe ſtretches half an inch beyond his chin. The aperture of the mouth, when he keeps it cloſe in profile, is a little more than an inch. The circumference of his ſnout around both his jaws is 3 inches and $\frac{3}{8}$ths; and round his head, juſt above his ears, 8 inches and $\frac{5}{8}$ths; the circumference of his neck is 8 inches and a half, and its length one inch and a half. He ſeems more willing to turn his body altogether, than his neck alone. The circumference of his body, meaſured behind his forelegs, is 9 inches and three quarters, and that of his body where greateſt, eleven inches and $\frac{3}{8}$ths. The length of his foreleg and toe is 3 inches and a half. The length of his hind thigh is 3 inches and $\frac{1}{8}$th, and the length of his hind leg to the toe taken together, is 2 feet 2 inches. The length of the forefoot is 1 inch and $\frac{3}{8}$ths; the length of the middle toe 6 lines, and its breadth 6 lines alſo. The diſtance between

the point of the noſe and the firſt corner of the eye is one inch and $\frac{4}{5}$ths; and the length of his eye, from one angle to the other, 4 lines. The difference from the fore angle of his eye to the root of his ear is one inch 3 lines, and the opening of his eye 2 lines and a half. His upper lip is covered with a pencil of ſtrong hairs for muſtachoes, the length of which are 3 inches and $\frac{4}{5}$ths, and thoſe of his eye-brows 2 inches and $\frac{2}{5}$ths.

He has no tail, and gives at firſt ſight the idea of a rat, rather than of any other creature. His colour is a grey mixt with a reddiſh brown, perfectly like the wild or warren rabbit. His belly is white, from the point of the lower jaw, to where his tail would begin, if that he had one. All over his body he has ſcattered hairs, ſtrong and poliſhed like his muſtachoes, theſe are for the moſt part two inches and a quarter in length. His ears are round, not pointed. He makes no noiſe that ever I heard, but certainly chews the cud. To diſcover this, was the principal reaſon of my keeping him alive; thoſe with whom he is acquainted he follows with great aſſiduity. The arrival of any living creature, even of a bird, makes him ſeek for a hiding-place, and I ſhut him up in a cage with a ſmall chicken, after omitting feeding him a whole day; the next morning the chicken was unhurt, tho' the Aſhkoko came to me with great ſigns of having ſuffered with hunger. I likewiſe made a ſecond experiment, by incloſing two ſmaller birds with him, for the ſpace of ſeveral weeks; neither were theſe hurt, though both of them fed, without impediment, of the meat that was thrown into his cage, and the ſmalleſt of theſe a kind of tit-mouſe, ſeemed to be advancing in a ſort of familiarity with him, though I never ſaw it venture to perch

perch upon him, yet it would eat frequently, and at the ſame time, of the food upon which the Aſhkoko was feeding; and in this conſiſted chiefly the familiarity I ſpeak of, for the Aſhkoko himſelf never ſhewed any alteration of behaviour upon the preſence of the bird, but treated it with a kind of abſolute indifference. The cage, indeed, was large, and the birds having a perch to ſit upon in the upper part of it, they did not annoy one another.

In Amhara this animal is called Aſhkoko, which I apprehend is derived from the ſingularity of thoſe long herinacious hairs, which, like ſmall thorns, grow about his back, and which in Amhara are called Aſhok. In Arabia and Syria he is called Iſrael's Sheep, or Gannim Iſrael, for what reaſon I know not, unleſs it is chiefly from his frequenting the rocks of Horeb and Sinai, where the children of Iſrael made their forty years peregrination; perhaps this name obtains only among the Arabians. I apprehend he is known by that of Saphan in the Hebrew, and is the animal erroneouſly called by our tranſlators Cuniculus, the rabbit or coney.

Many are the reaſons againſt admitting this animal, mentioned by ſcripture, to be the rabbit. We know that this laſt was an animal peculiar to Spain, and therefore could not be ſuppoſed to be either in Judea or Arabia. They are gregarious indeed, and ſo far reſemble each other, as alſo in point of ſize, but in place of ſeeking houſes in the rocks, we know the cuniculus' deſire is conſtantly ſand. They have claws, indeed, or nails, with which they dig holes or burrows, but there is nothing remarkable in them, or their frequenting rocks, ſo as to be deſcribed by that circumſtance;

cumſtance; neither is there any thing in the character of the rabbit that denotes excellent wiſdom, or that they ſupply the want of ſtrength by any remarkable ſagacity. The ſaphan then is not the rabbit, which laſt, unleſs it was brought to him by his ſhips from Europe, Solomon never ſaw. It was not the rabbit's particular character to haunt the rocks. He was by no means diſtinguiſhed for feebleneſs, or being any way unprovided with means of digging for himſelf holes. On the contrary, he was armed with claws, and it was his character to dig ſuch, not in the rocks, but in the ſands. Nor was he any way diſtinguiſhed for wiſdom, more than the hare, the hedge-hog, or any of his neighbours.

Let us now apply theſe characters to the Aſhkoko. He is above all other animals ſo much attached to the rock, that I never once ſaw him on the ground, or from among large ſtones in the mouth of caves, where is his conſtant reſidence; he is gregarious, and lives in families. He is in Judea, Paleſtine, and Arabia, and conſequently muſt have been familiar to Solomon. For David deſcribes him very pertinently, and joins him with other animals perfectly known to all men: "The hills are a refuge for the wild goats, and the rocks for the ſaphan, or aſhkoko *." And Solomon ſays, "There be four things which are little upon the earth, but they are exceeding wiſe †:"—"The ſaphannim are but a feeble folk, yet make they their houſes in the rocks ‡." Now this, I think, very obviouſly fixes the Aſhkoko to be the ſaphan, for this weakneſs ſeems to allude

* Pſalm civ. ver. 18. † Prov. chap. xxx. ver. 24. ‡ Prov. chap. xxx. ver. 26.

ſuſe to his feet, and how inadequate theſe are to dig holes in the rock, where yet, however, he lodges. Theſe are, as I have already obſerved, perfectly round; very pulpy, or fleſhy, ſo liable to be excoriated or hurt, and of a ſoft fleſhy ſubſtance. Notwithſtanding which, they build houſes in the very hardeſt rocks, more inacceſſible than thoſe of the rabbit, and in which they abide in greater ſafety; not by exertion of ſtrength, for they have it not, but are truly as Solomon ſays, a feeble folk, but by their own ſagacity and judgment, and are therefore juſtly deſcribed as wiſe. Laſtly, what leaves the thing without doubt is, that ſome of the Arabs, particularly Damir, ſay, that the ſaphan has no tail; that it is leſs than a cat, and lives in houſes, that is, not houſes with men, as there are few of theſe in the country where the ſaphan is; but that he builds houſes, or neſts of ſtraw, as Solomon has ſaid of him, in contradiſtinction to the rabbit, and rat, and thoſe other animals, that burrow in the ground, who cannot be ſaid to build houſes, as is expreſsly ſaid of him.

The Chriſtians in Abyſſinia do not eat the fleſh of this animal, as holding it unclean, neither do the Mahometans, who in many reſpects of this kind in abſtinence from wild meat, have the ſame ſcruple as chriſtians. The Arabs in Arabia Petrea do eat it, and I am informed thoſe on Mount Libanus alſo. Thoſe of this kind that I ſaw were very fat, and their fleſh as white as that of a chicken. Though I killed them frequently with the gun, yet I never happened to be alone ſo as to be able to eat them. They are quite devoid of all ſmell and rankneſs, which cannot be ſaid of the rabbit.

I HAVE no doubt that the El Akbar and the El Webro of the Arabs, are both the ſame animal. The El Akbar only means the largeſt of the Mus-montanus, under which they have claſſed the Jerboa. The Jerd, and El Webro, as alſo the Aſhkoko or Akbar, anſwer to the character of having no tail.

BOOTED LYNX.

THIS is a very beautiful ſpecies of Lynx, and, as far as I know, the ſmalleſt of the kind. His body from the tip of the noſe to the anus being only 22 inches. His back, neck, and forepart of his feet are of a dirty grey. His belly is of a dirty white, ſpotted with undefined marks, or ſtains of red. Below his eyes, and on each ſide of his noſe, is a reddiſh brown, the back of his ears being of the ſame colour, but rather darker; the inſide of his ears is very thickly clothed with fine white hair, and at the end is the pencil of hairs diſtinctive of this genus. On the back of his forefeet, he has a black ſtreak or mark, which reaches from his heel

Lynx.

Heath Sc.

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two inches up his leg. On his hinder foot he has the ſame, which reaches four inches from the heel, and ends juſt below the firſt joint, and from this circumſtance I have given him his name.

His tail is 13 inches long, the lower part of it, for 6 inches, is occupied with black rings. Between theſe rings his tail is nearly white, the reſt much the ſame colour as his back. From his noſe to his occiput is 4 inches and three quarters. From one eye to the other, meaſuring acroſs his noſe, is one inch and three quarters. From the baſe of one ear to that of the other, is 2 inches and $\frac{2}{3}$ths. The aperture of the eye three quarters of an inch, and of a yellow iris. The length of his ear from its baſe to the point of the pencil of hairs at the top of it, 4 inches and three quarters. From the ſole of his forefoot to his ſhoulder, as he ſtands, 13 inches and three quarters. From the ſole of his hind foot, to the top of his rump, 15 inches and a quarter.

He has very much the appearance of a common cat, both from the length of his tail, and the ſhape of his head, which however is broader, and his neck thicker than that of a domeſtic animal. He is an inhabitant of Ras el Feel, and, ſmall as he is, lives among thoſe tyrants of the foreſt, the elephant and rhinoceros. I do not mean that he has any hunting connections with them, as the jackal with the lion, I rather think he avails himſelf of what is left by the hunters of the carcaſes of thoſe huge beaſts. But the chief of all his food is the Guinea-hen, of which the thickets and buſhes of this country are full. For theſe he lurks chiefly at the pools of water when they drink, and in this act of violence I ſurpriſed him. He is ſaid to be exceedingly

 fierce,

fierce, and to attack a man if any way preſſed. At this time he mounts eaſily upon the higheſt trees; at other times he is content with hiding himſelf in buſhes, but in the ſeaſon of the fly he takes to holes and caverns in the ground. I never ſaw its young ones, nor did I ever hear any noiſe it makes, for the ſhot killed him outright, but did not in the leaſt disfigure him; ſo that the reader may depend upon this repreſentation of him as I have given it, with all poſſible truth and preciſion.

OF BIRDS.

THE number of birds in Abyſſinia exceeds that of other animals beyond proportion. The high and low countries are equally ſtored with them, the firſt kind are the carnivorous birds. Many ſpecies of the eagle and hawk, many more ſtill of the vulture kind, as it were overſtock all parts of this country. That ſpecies of glede called Haddaya, ſo frequent in Egypt, comes very punctually into Ethiopia, at the return of the ſun, after the tropical rains. The quantity of ſhell-fiſh which then covers the edges of the deſert, and leaves the ſalt ſprings where they have been nouriſhed, ſurpriſed by the heat, and deſerted by the moiſture, are the firſt food theſe birds find in their way. They then are ſupplied in the neighbouring Kolla, by the carcaſes of thoſe large beaſts, the elephant, rhinoceros, and giraffa, the whole tribe of the deer kind, and the wild aſſes

that are ſlain by the hunters, part of which only are uſed in food.

THE vaſt quantity of field-rats and mice that appear after harveſt, and ſwarm in the cracks, or fiſſures in the ground, are their next ſupply. But above all, the great ſlaughter made of cattle upon the march of the army, the beaſts of burden which die under carriage and ill treatment, the number of men that periſh by diſeaſe and by the ſword, whoſe carcaſes are never buried by this barbarous and unclean people, compoſe ſuch a quantity, and variety of carrion, that it brings together at one time a multitude of birds of prey, it would ſeem there was not ſuch a number in the whole earth. Theſe follow the camp, and abide by it; indeed, they ſeem another camp round it, for, beſides thoſe that ventured among the tents, I have ſeen the fields covered on every ſide as far as the eyes could reach, and the branches of the trees ready to break under the preſſure of their weight.

THIS unclean multitude remain together in perfect peace till the rains become conſtant and heavy; which deprive them of their food by forcing the hunters and armies to retire home. Nor are other circumſtances wanting equally obvious, which account for the great number of birds that live on inſects. The fly, of which we have already ſpoken ſo often, reigns in great ſwarms from May to September on the plains, and in all the low country down to the ſands of Atbara. Theſe are attended by a multitude of enemies, ſome of whom ſeek them for food; others ſeem to perſecute them from hatred, or for ſport, from the multitude they ſcatter upon the ground, without further care concern-

ing

ing them. Honey is the principal food of all ranks of people in Abyſſinia, and conſequently a multitude of bees are produced everywhere. Part of theſe are kept in large cages, or baſkets, hung upon the trees; others attach themſelves to the branches, others build neſts in the ſoft wood of the trees, eſpecially the Bohabab, whoſe large and fragrant flower furniſhes them with a honey which it ſtrongly perfumes. The honey generally borrows its colour from the flowers and herbs from whence it is gathered. At Dixan we were ſurpriſed to ſee the honey red like blood, and nothing can have an appearance more diſguſting than this, when mixed with melted butter. There are bees which build in the earth, whoſe honey is nearly black, as has been obſerved by the jeſuit Jerome Lobo, I willingly place this truth to his credit, the only one, I think, I can find in his natural hiſtory, a ſmall atonement for the multitude of falſehoods this vain and idle romancer has told on every occaſion. Nor are the granivorous birds fewer in number or worſe provided for; all the trees and ſhrubs in Abyſſinia bear flowers, and conſequently ſeeds, berries, or fruit, of ſome kind or other; food for all or ſome particular ſpecies of birds. Every tree and buſh carries theſe likewiſe in all ſtages of ripeneſs, in all ſeaſons of the year.

This is, however, not to be underſtood as meaning that any tree produces in the ſame part, fruit or flowers more than once a-year; but the time of each part's bearing is very particularly diſtributed. The weſt ſide of every tree is the firſt that bloſſoms, there its fruit proceeds in all ſtages of ripeneſs till it falls to the ground. It is ſucceeded by the ſouth, which undergoes the ſame proceſs. From this it croſſes the tree, and the north is next in fruit; laſt

of all comes the eaſt, which produces flowers and fruit till the beginning of the rainy ſeaſon. In the end of April new leaves puſh off the old ones without leaving the tree at any time bare, ſo that every tree in Abyſſinia appears to be an evergreen. The laſt I ſaw in flower was the coffee-tree at Emfras the 20th of April 1770: from this time till the rains begin, and all the ſeaſon of them, the trees get fully into leaf, and the harveſt, which is generally in theſe months throughout Abyſſinia, ſupplies the deficiency of the ſeed upon buſhes and trees. All the leaves of the trees in Abyſſinia are very highly varniſhed, and of a tough leather like texture, which enables them to ſupport the conſtant and violent rains under which they are produced.

This proviſion made for granivorous birds, in itſelf ſo ample, is doubled by another extraordinary regulation. The country being divided by a ridge of mountains, a line drawn along the top of theſe divides the ſeaſons likewiſe; ſo that thoſe birds to whom any one food is neceſſary become birds of paſſage, and, by a ſhort migration, find the ſame ſeaſons, and the ſame food, on the one ſide, which the rains and change of weather had deprived them of on the other.

There is no great plenty of water-fowl in Abyſſinia, eſpecially of the web-footed kind. I never remember to have ſeen one of theſe that are not common in moſt parts of Europe. Vaſt variety of ſtorks cover the plains in May, when the rains become conſtant. The large indigenous birds that reſide conſtantly on the high mountains of Samen and Taranta, have moſt of them an extraordinary proviſion made againſt the wet and the weather; each feather is a tube, from the pores of which iſſue a very fine duſt

or powder, in ſuch abundance as to ſtain the hand upon graſping them. This I ſhall preſently mention in the deſcription of one of theſe birds, the golden eagle of Lamalmon. In looking at this duſt through a very ſtrong magnifying power, I thought I diſcerned it to be in form of a number of fine feathers.

Though all the deep and graſſy bogs have ſnipes in them, I never once ſaw a woodcock: ſwallows there are of many kinds, unknown in Europe; thoſe that are common in Europe appear in paſſage at the very ſeaſon when they take their flight from thence. We ſaw the greateſt part of them in the iſland of Maſuah where they lighted and tarried two days, and then proceeded with moon-light nights to the ſouth-weſt. But I once ſaw in the country of the Baharnagaſh, in the province of Tigré, the blue forked-tailed ſwallow, which builds in the windows in England, making his neſt out of ſeaſon, when he ſhould have been upon his migration; this I have already taken notice of in my journey from Maſuah to Gondar.

There are few owls in Abyſſinia; but thoſe are of an immenſe ſize and beauty. The crow is marked white and black nearly in equal portions. There is one kind of raven; he, too, of a large ſize, his feathers black intermixed with brown; his beak tipt with white, and a figure like a cup or chalice of white feathers on his occiput, or hinder part of his head. I never ſaw either ſparrow, magpie, or bat in Abyſſinia. Pigeons are there in great numbers, and of many varieties; ſome of them very excellent for eating. I ſhall hereafter deſcribe one of them whoſe name is Waalia. All the pigeons but one ſort are birds of paſſage, that one lives in

in the eaves of houſes or holes in the walls, and this is not eaten, but accounted unclean for a very whimſical reaſon; they ſay it has claws like a falcon, and is a mixture from that bird. The ſame ſort of imagination is that of the Turks, who ſay, that the Turkey, from the tuft of black hair that is upon his breaſt, partakes of the nature of the hog. This pigeon's feet are indeed large, but very different in formation from that of the falcon.

THERE are no geeſe in Abyſſinia, wild or tame, excepting what is called the Golden Gooſe, Gooſe of the Nile, or Gooſe of the Cape, common in all the South of Africa: theſe build their neſts upon trees, and when not in water, generally ſit upon them.

I HAVE already ſpoken of fiſhes, and have entered very ſparingly into their hiſtory. Theſe, and other marine productions of the Arabian Gulf, or even the ſmall ſhare that I have painted and collected, would occupy many large volumes to exhibit and deſcribe, and would coſt, in the engraving, a much larger ſum than I have any proſpect of ever being able to afford.

NISSER.

Nisser Werke.)

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NISSER, OR GOLDEN EAGLE.

I HAVE ventured from his colour to call this bird the Golden Eagle, by way of diſtinction, as its Ethiopic name, Niſſer, is only a generic one, and imports no more than the Engliſh name, Eagle. He is called by the vulgar Abou Duch'n, or Father Long Beard, which we may imagine was given him from the tuft of hair he has below his beak.

I SUPPOSE him to be not only the largeſt of the eagle kind, but ſurely one of the largeſt birds that flies. From wing to wing he was 8 feet 4 inches. From the tip of his tail to the point of his beak when dead, 4 feet 7 inches. He weighed 22 pounds, was very full of fleſh. He ſeemed remarkably ſhort in the legs, being only four inches from the joining of the foot to where the leg joins the thigh, and from the joint of the thigh to the joining of his body 6

inches. The thickneſs of his thigh was little leſs than 4 inches; it was extremely muſcular, and covered with fleſh. His middle claw was about 2 inches and a half long, not very ſharp at the point, but extremely ſtrong. From the root of the bill, to the point, was 3 inches and a quarter, and one inch and three quarters in breadth at the root. A forked bruſh of ſtrong hair, divided at the point into two, proceeded from the cavity of his lower jaw at the beginning of his throat. He had the ſmalleſt eye I ever remember to have ſeen in a large bird, the aperture being ſcarcely half an inch. The crown of his head was bare or bald, ſo was the front where the bill and ſcull joined.

This noble bird was not an object of any chace or purſuit, nor ſtood in need of any ſtratagem to bring him within our reach. Upon the higheſt top of the mountain Lamalmon, while my ſervants were refreſhing themſelves from that toilſome rugged aſcent, and enjoying the pleaſure of a moſt delightful climate, eating their dinner in the outer air with ſeveral large diſhes of boiled goats fleſh before them, this enemy, as he turned out to be to them, appeared ſuddenly; he did not ſtoop rapidly from a height, but came flying ſlowly along the ground, and ſat down cloſe to the meat within the ring the men had made round it. A great ſhout, or rather cry of diſtreſs, called me to the place. I ſaw the eagle ſtand for a minute as if to recollect himſelf, while the ſervants ran for their lances and ſhields. I walked up as nearly to him as I had time to do. His attention was fully fixed upon the fleſh. I ſaw him put his foot into the pan where was a large piece in water prepared for boiling, but finding the ſmart which he had

not

not expected, he withdrew it, and forſook the piece which he held.

THERE were two large pieces, a leg and a ſhoulder, lying upon a wooden platter, into theſe he truſſed both his claws, and carried them off, but I thought he looked wiſtfully at the large piece which remained in the warm water. Away he went ſlowly along the ground as he had come. The face of the cliff over which criminals are thrown took him from our ſight. The Mahometans that drove the aſſes, who had, as we have already obſerved in the courſe of the journey, ſuffered from the hyæna, were much alarmed, and aſſured me of his return. My ſervants, on the other hand, very unwillingly expected him, and thought he had already more than his ſhare.

As I had myſelf a deſire of more intimate acquaintance with him, I loaded a rifle-gun with ball, and ſat down cloſe to the platter by the meat. It was not many minutes before he came, and a prodigious ſhout was raiſed by my attendants, He is coming, he is coming, enough to have diſcouraged a leſs courageous animal. Whether he was not quite ſo hungry as at the firſt viſit, or ſuſpected ſomething from my appearance, I know not, but he made a ſmall turn, and ſat down about ten yards from me, the pan with the meat being between me and him. As the field was clear before me, and I did not know but his next move might bring him oppoſite to ſome of my people, and ſo that he might actually get the reſt of the meat and make off, I ſhot him with the ball through the middle of his body about two inches below the wing, ſo that he lay down upon the graſs without a ſingle flutter. Upon laying hold of his monſtrous carcaſe, I was

not a little ſurpriſed at ſeeing my hands covered and tinged with yellow powder or duſt. Upon turning him upon his belly, and examining the feathers of his back, they produced a brown duſt, the colour of the feathers there. This duſt was not in ſmall quantities, for, upon ſtriking his breaſt, the yellow powder flew in fully greater quantity than from a hair-dreſſer's powder puff. The feathers of the belly and breaſt, which were of a gold colour, did not appear to have any thing extraordinary in their formation, but the large feathers in the ſhoulder and wings ſeemed apparently to be fine tubes, which upon preſſure ſcattered this duſt upon the finer part of the feather, but this was brown, the colour of the feathers of the back. Upon the ſide of the wing, the ribs, or hard part of the feather, ſeemed to be bare as if worn, or, I rather think, were renewing themſelves, having before failed in their function.

What is the reaſon of this extraordinary proviſion of nature is not in my power to determine. As it is an unuſual one, it is probably meant for a defence againſt the climate in favour of thoſe birds which live in thoſe almoſt inacceſſible heights of a country, doomed, even in its lower parts, to ſeveral months of exceſſive rain. The pigeons we ſaw upon Lamalmon, had not this duſt in their feathers, nor had the quails; from which I gueſs theſe to be ſtrangers, or birds of paſſage, that had no need of this proviſion, created for the wants of the indigenous, ſuch as this eagle is, for he is unknown in the low country. That ſame day I ſhot a heron, in nothing different from ours, only that he was ſmaller, who had upon his breaſt and back a blue powder, in full as great quantity as that of the eagle.

BLACK

Nisser Tokoor.

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BLACK EAGLE.

THIS beautiful bird was the firſt ſubject that ſuffered the loſs of liberty, after the king and whole army had vindicated theirs, had paſſed the Nile in circumſtances ſcarcely within the bounds of credibility, had eſcaped all the deep-laid ſchemes of Faſil, and by a train of accidents almoſt miraculous, paſſed triumphantly on before him after the battle of Limjour, having joined Keſla Yaſous, advanced and encamped at Dingleber the 28th of May 1770.

THIS bird, who from the nobleneſs of his kind was appoſitely enough thought to be a type of the king, fell by a fate, in which he ſtill more reſembled him, overpowered by the ſtrength and number of a ſpecies of birds in character infinitely below him. It has been repeatedly obſerved in the courſe of my narrative, that an inconceivable number

number of birds and beaſts of prey, eſpecially the former, follow an Abyſſinian army pace by pace, from the firſt day of its march till its return, increaſing always in prodigious proportion the more it advances into the country. An army there leaves nothing living behind, not the veſtige of habitation, but the fire and the ſword reduces everything to a wilderneſs and ſolitude.

The beaſts and birds unmoleſted have the country to themſelves, and increaſe beyond all poſſible conception. The ſlovenly manner of this ſavage people, who after a battle neither bury friends nor enemies, the quantity of beaſts of burden that die perpetually under the load of baggage, and variety of miſmanagement, the quantity of offal and half-eaten carcaſes of cows, goats, and ſheep, which they conſume in their march for their ſuſtenance, all furniſh a ſtock of carrion ſufficient to occaſion contagious diſtempers, were there not ſuch a prodigious number of voracious attendants, who conſume them almoſt before putrefaction. In their voracious ſtomachs lies the grave of the braveſt ſoldier, unleſs very high birth or office, or very extraordinary affection in their attendants, procure them a more decent, though more uncommon fate, a ſepulchre in a neighbouring church-yard. There is no giving the reader any idea of their number, unleſs by comparing them to the ſand of the ſea. While the army is in motion they are a black canopy, which extend over it for leagues. When encamped, the ground is diſcoloured with them beyond the ſight of the eye, all the trees are loaded with them. I need not ſay that theſe are all carrion birds, ſuch as the vulture, kite, and raven, that is a ſpecies to which nature has refu-

ſed both the inclination and the power of feeding upon living ſubjects.

By what accident this ſmall eagle, who was not a carrion bird, came among theſe cowardly and unclean feeders, is more than I can ſay; but it met the fate very common to thoſe who aſſort with bad company, and thoſe of ſentiments and manners inferior to their own. One of theſe, a kite, vulture, or raven, I know not which, ſtruck the poor eagle down to the ground juſt before the door of the king's tent, and hurt him ſo violently, that he had ſcarcely ſtrength to flutter under the canopy where the king was ſitting; pages and officers of the bed-chamber ſoon ſeized him. It was not long before they made the application that the king was to be dethroned by a ſubject, and Faſil was in everybody's mouth. The omen was of the kind too unpleaſant to be dwelt upon; the ſenſible people of the attendants hurried it away, and it of courſe came to me with all the circumſtances of the accident, the moral of that tale, and twenty prophecies that were current to confirm it. I confeſs my own weakneſs; at firſt it made a ſtrong impreſſion upon me. In the moment the paſſage of Shakeſpeare came into my mind,

——————" On Tueſday laſt,
" A falcon tow'ring in his pride of place,
" Was by a mouſing owl hawk'd at and kill'd."

And this recollection occupied my mind ſo forcibly, that I ſtood for a moment ſpeechleſs, and as it were rivetted to the ground. This behaviour, unuſual in me, who uſed always

to

to laugh at their preſages, and prophecies, was obſerved by the page that brought me the bird, and was reported to the king; and though he did not ſpeak of it that time, yet ſome days after, when I was taking my leave of him, on his retreat from Gondar to Tigré, he mentioned it to me ſaid we were miſtaken, for the omen referred to Powuſſen' of Begemder, and not to Waragna Faſil.

After ſketching his genteel and noble manner while alive, our unfortunate priſoner found his death by the needle, was put out of ſight, and carried to Gondar, where the drawing was finiſhed. He was altogether of a dark brown, or cheſnut, leading to black. The whole length, from the extremity of the tail to the noſe, was two feet four inches. The breadth, from wing to wing, four feet ſix inches. He was very lean, and weighed ſomething leſs than five pounds. The fourth feather of his wing after the three largeſt, was white. The feathers of the lower ſide of his tail were of a bluiſh brown, checkered with white, and thoſe of the upper ſide of the tail were black and white alternately. His thighs were thick-covered with feathers, and ſo were his legs, down to the joining of the foot. His feet were yellow, with ſtrong black claws. The inſide of his wings was white, with a mixture of brown. His leg, from the joining of the foot, was three inches. His beak, from the point to where the feathers reached, was two inches and a quarter. The length of his creſt from the head to the longeſt feather, five inches. The eye was black, with a caſt of fire colour in it, the iris yellow, and the whole eye exceedingly beautiful. He ſeemed wonderfully tame, or rather ſluggiſh, but whether that was from his nature or

Rachamah

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misfortune I cannot be a judge, never having ſeen another.

RACHAMAH.

THIS bird is met with in ſome places in the ſouth of Syria and in Barbary, but is no where ſo frequent as in Egypt and about Cairo. It is called, by the Europeans, Poule de Faraone, the hen or bird of Pharaoh. It is a vulture of the leſſer kind, not being much larger than our rook or crow, though, by the length of its wings, and the erect manner in which it carries its head, it appears conſiderably larger. In Egypt and all over Barbary it is called Rachamah, and yet it has been very much doubted what bird this was, as well as what was the origin of that name. Some of the Arabs will have it derived from Archam, which ſignifies variegated, or of different colours. It has been anſwered, that this is not the derivation, as archam in Arabic ſignifies variegated, or of more colours than two or three blended

together, whereas this is in its feathers only black and white, ſeparate from one another, and cannot be called variegated. But I muſt here obſerve, that this is by no means a proper interpretation of the Arabic word. Among many examples I could give, I ſhall adduce but one. There is a particular kind of ſheep in Arabia Felix, whoſe head and part of the neck are black, and the reſt of the beaſt white; it is chiefly found between Mocha and the Straits of Babelmandeb. This in Arabic is called Rachama, for no other reaſon but becauſe it is marked black and white, which are preciſely the two colours which diſtinguiſh the bird before us.

But I ſtill am induced to believe the origin of this bird's name has an older and more claſſical derivation than that which we have juſt ſpoken of. We know from Horus Apollo, in his book upon Hieroglyphics, that the Rachma, or ſhe-vulture, was ſacred to Iſis, and that its feathers adorned the ſtatue of that goddeſs. He ſays it was the emblem of parental affection, and that the Egyptians, about to write an affectionate mother, painted a ſhe-vulture. He ſays further, that this female vulture, having hatched its young ones, continues with them one hundred and twenty days, providing them with all neceſſaries; and, when the ſtock of food fails them, ſhe tears off the fleſhy part of her thigh, and feeds them with that and the blood which flows from the wound. Rachama, then, is good Hebrew, it is from Rechem, female love, or attachment, from an origin which it cannot have in men. In this ſenſe we ſee it uſed with great propriety in the firſt book of Kings *, in

* Chap. iii. ver. 26.

in Isaiah *, and in Lamentations †, and it seems particularly to mean what the Egyptians made it a hieroglyphic of in very ancient ages, and before the time of Moses, maternal affection towards their progeny. No mention is here made of the male Rachama, nor was he celebrated for any particular quality.

From this silence, or negative personage in him, arose a fable that there was no male in this species. Horus Apollo ‡, after naming this bird always in the feminine gender, tells us roundly, that there is no male of the kind, but that the female conceives from the south wind. Plutarch §, Ammianus ‖, and all the Greeks, say the same thing; and Tzetzes ¶, after having repeated the same story at large, tells us that he took it all from the Egyptians, so there seems to be little doubt either of the origin or meaning of the name.

The fathers in the first ages, after the death of Christ, seem to have been wonderfully pressed in point of argument before they could have recourse to a fable like this to vindicate the possibility of the Virgin Mary's conception without human means. Tertullian*, Orgines ⸸, Bazil =, and Ambrosius ++, are all wild enough to found upon this ridiculous argument, and little was wanting for some of these

* Chap. xlix. ver. 15.
† Chap. iv. ver. 10.
‡ Hieroglyph. lib. i. cap. 11.
§ Plut. In quest. Rom. quest. 93.
‖ Lib. xvii.
¶ Chil. 12. hist. 439.
* In Valentin. cap. 10.
⸸ Lib i. Contra Celsum.
= In hexaem homil. 8.
++ In hexaem, page 27.

learned ones to land this fable upon Moſes, who probably knew it as a vulgar error before his time, but was very far from paying any regard to it; on the contrary, it is with the utmoſt propriety and preciſion, that, ſpeaking to the people, he calls it Rachama in the feminine, becauſe he was then giving them a liſt of birds forbidden to be ate *, among which he ſelected the female vulture, as that was beſt known, and the great object of idolatry and ſuperſtition; and the male, and all the leſſer abominations of that ſpecies, he included together in the word that followed *his* kind; though the Engliſh tranſlator, by calling the female vulture *him*, has introduced an impropriety that there was not the leaſt foundation for. That Moſes was not the author of or believer in this Egyptian fable, is plain from a verſe in Exodus, where, at another time, he ſpeaks of this bird as a male, and calls him Racham, and not Rachama.

It will not be improper that I here take notice, that the Engliſh tranſlator, by his ignorance of language, has loſt all the beauty and even the ſenſe of the Hebrew original. He makes God ſay, Ye have ſeen what I did unto the Egyptians, and how I bore you on eagles wings, and brought you unto myſelf †". Now, if the expreſſion had been really Eagle, the word would have been Niſr, and would have ſignified nothing; but, in place of eagle, God ſays Vulture, the emblem of maternal affection and maternal tenderneſs towards his children, which has a particular connection with, " brought you unto myſelf;" ſo that the paſſage will run thus, Say to the children

* Dent. chap. xiv. ver. 13. † Exod. chap. xix. ver. 4.

children of Iſrael, See how I have puniſhed the Egyptians, while I bore you up on the wings of the Rachama, that is, of parental tenderneſs and affection, and brought you home to myſelf. It is our part to be thankful that the truths of Holy Scripture are preſerved to us entire, but ſtill it is a rational regret that great part of the beauty of the original is loſt.

NOTWITHSTANDING all that has been ſaid, this bird has been miſtaken nearly by all the interpreters Hebrews, Syrians, and Samaritans; the Greeks, from imaginations of their own, have thought it to be the pelican, the ſtork, the ſwan, and the merops. Bochart, after a variety of gueſſes, acknowledges his own ignorance, and excuſes it by laying equal blame upon others. Hitherto, ſays he, we have not been able to condeſcend upon what bird this was, becauſe thoſe that have wrote concerning it were as ignorant in the natural hiſtory of things as they were ſkilful in the interpretation of words.

THE point of the beak of this bird is black, very ſharp and ſtrong for about three quarters of an inch, it is then covered by a yellow, fleſhy membrane, which clothes it as it were both above and below, as likewiſe the forepart of the head and throat, and ends in a ſharp point before, nearly oppoſite to where the neck joins the breaſt; this membrane is wrinkled, and has a few hairs growing thinly ſcattered upon the lower part of it. It has large, open noſtrils, and prodigious large ears, which are not covered by any feathers whatever. The body is perfect white from the middle of the head, where it joins the yellow membrane, down to the tail. The large feathers of its wing

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are black; they are ſix in number. The leſſer feathers are three, of an iron-grey, lighter towards the middle, and theſe are covered with three others leſſer ſtill, but of the ſame form, of an iron ruſty colour; thoſe feathers that cover the large wing-feathers are at the top for about an inch and a quarter of an iron-grey, but the bottom is pure white. The tail is broad and thick above, and draws to a point at the bottom. It is not compoſed of large feathers, and is not half an inch longer than the point of its wings. Its thighs are cloathed with a ſoft down-like feather, as far as the joint. Its legs are of a dirty white, inclining to fleſh colour, rough, with ſmall tubercules which are ſoft and fleſhy. It has three toes before and one behind; the middle of theſe is conſiderably the longeſt; they are armed with black claws, rather ſtrong than pointed, or much crooked. It has no voice that ever I heard, generally goes ſingle, and oftener ſits and walks upon the ground than upon trees. It delights in the moſt putrid and ſtinking kind of carrion, has itſelf a very ſtrong ſmell, and putrifies very ſpeedily.

It is a very great breach of order, or police, to kill any one of theſe birds near Cairo. But as there are few of its ſpecies in Egypt, and its name is the ſame all over Africa and Arabia, it ſeems to me ſtrange that the Arabian or Hebrew writers ſhould have found ſo much difficulty in diſcovering what was the bird. It lays but two eggs, and builds its neſt in the moſt deſert parts of the country. More of its hiſtory or manners I do not know. The books are full of fanciful ſtories concerning it, which the inſtructed reader at firſt ſight will know to be but fable.

Abba Gumba.

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Heath Sc.

ERKOOM.

IT would appear that this bird is part of a large tribe, the greateſt variety in which lies in his beak and horn. The horn he wears ſometimes upon the beak, and ſometimes upon the forehead above the root of the beak. Theſe are the only parts that appear in collections. I gave to the cabinet of the king of France the firſt bird of this kind ſeen entire, and I have here exhibited the firſt figure and deſcription of it that ever was ſeen in natural hiſtory, drawn from the life. In the eaſt part of Abyſſinia it is called Abba Gumba, in the language of Tigré; on the weſtern ſide of the Tacazzè it is called Erkoom; the firſt of its names is apparently from the groaning noiſe it makes, the ſecond has no ſignification in any language that I know.

AT Ras el Feel, in my return through Sennaar, I made this drawing from a very entire bird, but ſlightly wounded;

ed; it was in that country called Teir el Naciba, the bird of deſtiny. This bird, or the kind of it, is by naturaliſts called the Indian crow, or raven; for what reaſon it is thus claſſed is more than I can tell. The reader will ſee, when I deſcribe his particular parts, whether they agree with thoſe of the raven or not. There is one characteriſtic of the raven which he certainly has, he walks, and does not hop or jump in the manner that many others of that kind do; but then he, at times, runs with very great velocity, and, in running, very much reſembles the turkey, or buſtard, when his head is turned from you.

The colour of the eye of this bird is of a dark brown, or rather reddiſh caſt; but darker ſtill as it approaches the pupil; he has very large eye-laſhes, both upper and lower, but eſpecially his upper. From the point of the beak to the extremity of the tail is 3 feet 10 inches; the breadth from one point of the wing to the other extended, is 6 feet, and the length 22 inches. The length of the neck 10 inches, and its thickneſs 3 inches and a half; the length of the beak meaſuring the opening near the head ſtraight to the point, 10 inches; and from the point of the beak to the root of the horn 7 inches and $\frac{3}{8}$ths. The whole length of the horn is 3 inches and a half. The length of the horn from the foot to the extremity where it joins the beak, is 4 inches. The thickneſs of the beak in front of the opening is one inch and $\frac{7}{8}$ths. The thickneſs of the horn in front is one inch and $\frac{5}{8}$ths. The horn in height, taken from the upper part of the point to the beak, 2 inches. The length of the thighs 7 inches, and that of the legs 6 inches and $\frac{5}{8}$ths. The thickneſs in profile 7 lines, and in front 4 lines and a half. It has three toes before and one behind, but they are not very ſtrong, nor ſeem-

ingly made to tear up carcaſes. The length of the foot to the hinder toe is one inch 6 lines, the innermoſt is one inch 7 lines, the middle 2 inches 2 lines, and the laſt outer one 2 inches one line.

This bird is all of a black, or rather black mixed with ſoot-colour; the large feathers of the wing are ten in number, milk-white both without and within. The tip of his wings reaches very nearly to his tail; his beak and head meaſured together are 11 inches and a half, and his head 3 inches and a quarter. At his neck he has thoſe protuberances like the Turkey-cock, which are light-blue, but turn red upon his being chafed, or in the time the hen is laying.

I have ſeen the Erkoom with eighteen young ones; it runs upon the ground much more willingly than it flies, but when it is raiſed, flies both ſtrong and far. It has a rank ſmell, and is ſaid to live in Abyſſinia upon dead carcaſes. I never ſaw it approach any of theſe; and what convinces me this is untrue, is, that I never ſaw one of them follow the army, where there was always a general aſſembly of all the birds of prey in Abyſſinia.

It was very eaſy to ſee what was its food, by its place of rendezvous, which was in the fields of teff, upon the tops of which are always a number of green beetles, theſe he ſtrips off by drawing the ſtalk through his beak, and which operation wears his beak ſo that it appears to be ſerrated, and, often as I had occaſion to open this bird, I never found in him any thing but the green ſcarabeus, or beetle. He has a putrid or ſtinking ſmell, which I ſuppoſe is the reaſon he has been imagined to feed upon carrion.

The Erkoom builds in large, thick trees, always, if he can, near churches; has a covered neſt like that of a magpie, but four times as large as the eagle's. It places its neſt firm upon the trunk, without endeavouring to make it high from the ground; the entry is always on the eaſt ſide. It would ſeem that the Indian crow of Bontius is of this kind: it is difficult, however, of belief, that his natural food is nutmegs; for there ſeems nothing in his ſtructure or inclination, which is walking on the ground, that is neceſſary or convenient for taking ſuch food.

ABOU HANNES.

THE ancient and true name of this bird ſeems to be loſt. The preſent one is fancifully given from obſervation of a circumſtance of its œconomy; tranſlated, it ſignifies, Father John, and the reaſon is, that it appears on St John's day, the preciſe time when firſt the freſh water of the tropical rains is known in Egypt to have mixed with the Nile, and to

Abou Hannes.

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Heath Sc.

have made it lighter, ſweeter, and more exhaleable in dew, that is in the beginning of the ſeaſon of the tropical rains, when all water-fowl, that are birds of paſſage, reſort to Ethiopia in great numbers.

As I have obſerved this bird has loſt its name, ſo in the hiſtory of Egypt and Ethiopia we have loſt a bird, once very remarkable, of which now nothing remains but the name, this is the Ibis, to which divine honours were paid, whoſe bodies were embalmed and preſerved with the ſame care as thoſe of men. There ſtill remain many repoſitories full of them in Egypt, and appear everywhere in collections in the hands of the curious. Though the manner that theſe birds are prepared, and cauſtic ingredients, with which the body is injected, have greatly altered the conſiſtency of their parts, and the colour of their plumage, yet it is from theſe, viewed and compared deliberately, and at leiſure, that I am convinced the Abou Hannes is neither more nor leſs than the Ibis.

Several authors, treating of this bird, have involved it in more than Egyptian darkneſs. They have firſt ſaid it was a ſtork, then the hæmatopus, or red-legged heron; they then ſay its colour is of a fine ſhining black, its beak and legs of a deep red. Some have ſaid it was from it that men learned the way to adminiſter clyſters, others, that it conceived at the beak, and even laid eggs that way, and that its fleſh is ſweet and red like that of a ſalmon. All theſe and many more are fables. We know from Plutarch, that in the plumage, it is black and white like the pelargus. And the mummy pits, by furniſhing part of the bird itſelf, confirm us in the opinion.

The Abou Hannes has a beak ſhaped like that of a curlew, two-thirds of which is ſtraight, and the remaining third crooked; the upper part of a green, horny ſubſtance, and the lower black. From the occiput to where it joins the beak is four inches and a half. Its leg, from the lower joint of the thigh to the foot, is ſix inches, the bone round and ſtrong, according to the remark of Cicero, and from the lower joint of the thigh, to where it joins the body, is five inches and a half. The height of the body as it ſtands, from the ſole of its foot to the middle of the back, is nineteen inches. The aperture of the eye is one inch. Its feet and legs are black; has three toes before, armed with ſharp, ſtraight claws: it has a toe alſo behind. Its head is brown, and the ſame colour reaches down to the back, or where the back joins with the neck. Its throat is white, ſo are its breaſt, back, and thighs. The largeſt feathers of its wings are a deep black for thirteen inches from the tail, and from the extremity of the tail, ſix inches up the back is black likewiſe.

Now the meaſures of the beak, the tibia, the thigh-bone, and the ſcull, compared with the moſt perfect of the embalmed birds taken from the mummy pits, do agree in every thing as exactly as can be expected. The length of the beak in my drawing ſeems to exceed that of the embalmed bird, but I will not be poſitive; this ſmall error is not in the deſign, though the white feathers are ſcorched in the embalmed birds, yet there is no difficulty in perceiving the colour diſtinctly; there is leſs in diſtinguiſhing the black upon the wings and above its rump. The meaſure of both ſo exactly agree that they can ſcarcely be miſtaken.

The

The reaſon, we are told, why this bird was held in ſuch veneration in Egypt, was the great enmity it had to ſerpents, and the uſe of freeing the country from them; but for my own part, I muſt confeſs, that as I know, for certain, there are no quantity of ſerpents in Egypt, as the reaſon of things is that they ſhould be few, ſo I can never make myſelf believe they ever were in ſuch abundance, as to need any particular agent to diſtinguiſh itſelf by deſtroying them. Egypt Proper, that is the cultivated and inhabited part of it, is overflowed for five months every year by the Nile, and it is impoſſible vipers can abound where there is ſuch long and regular refrigerations. The viper caſts his ſkin in May, and is immediately after in his renewed youth and fulneſs of vigour. All this time he would be doomed in Egypt to live under water, or hid in ſome hole, and this is the time when the Ibis is in Egypt, ſo that the end of his coming would be fruſtrated by the abſence of his enemy. The vipers have their abode in the ſandy deſert of Libya, where even dew does not fall, where the ſand is continually in motion, parched with hot winds, and glowing with the ſcorching rays of the ſun. There the Ibis could not live; the country is not inhabited by man, and conſequently vipers there would be no nuiſance. Nay, we know theſe vipers of Libya are an article of commerce in Egypt. The Theriac is compoſed of them at Venice and at Rome, and they are diſperſed for the uſes of medicine throughout the different parts of the world.

Now, in this light, the Ibis could not live among them, nor would he be of benefit even if he could; but as we have it from a number of credible hiſtorians that the Ibis was plentiful in Egypt, that vipers, at leaſt, in ſome part of

it, were ſo frequent as to be a nuiſance, and that we know as ſurely two other things, that neither the vipers are a nuiſance, nor is the Ibis in Egypt at this day, we muſt look for ſome change in the œconomy of the country which can account for this.

We know in a manner not to doubt, that in ancient times Egypt was inhabited, and extended to the edges of the Libyan Deſert; nay, in ſome places, conſiderably into it; large lakes were dug in this country by their firſt kings, and theſe, filled in the time of the Nile's inundation, continued immenſe reſervoirs, which were let out by degrees to water the plantations and pleaſure-ground that had been created by man, in what was formerly a deſert. Nothing in fact was wanting but water, and theſe large lakes ſupplied this want abundantly, by furniſhing water of the pureſt and moſt perfect kind: in the neighbourhood of theſe artificial plantations, there can be no doubt the viper muſt be a nuiſance. Being indigenous in this his domicil, it is not probable he would quit it eaſily, and any deficiency of them in number would not have failed to be ſupplied from the deſerts in the neighbourhood. The prodigious pools of ſtagnant water would bring the Ibis thither, and place him near his enemy, and after man had once diſcerned his uſe, gratitude would ſoon lead him to reward him.

But after, when theſe immenſe lakes, and the conduits leading to them, were neglected, and the works ruined which conducted theſe artificial inundations, and covered the deſerts of Libya with verdure; when war and tyranny, and every ſort of bad government, made people fly from the country, or live precarioufly and inſecure in it, all this temporary

temporary paradiſe vaniſhed: the land was overflowed no more; the ſands of the deſert reſumed their ancient ſtation; there were no inhabitants in the country, no pools of water for the Ibis, nor was the viper a nuiſance. The Ibis retired to his native country Ethiopia, in the lower part of which, that is, in a hot country full of pools of ſtagnant water, he remains, and there I found him.

It is probable in Egypt he had increaſed greatly by the quantity of food and good entertainment he had. Upon theſe failing, he probably died and wore out of Egypt; and in the proportion in which he was at firſt created, which ſeems to have been a ſlender one, he remained in his native Ethiopia, for his emigration and increaſe in Egypt was merely accidental. This, I apprehend, is the true cauſe why the Ibis is now no longer known in Egypt; but I am ſatisfied to reſtore him to natural hiſtory, with at leaſt a probable conjecture, why he is now unknown in thoſe very regions where once he was worſhipped as a god. His figure appears frequently upon the obeliſks among the hieroglyphics, and further confirms my conjecture that this is the bird.

The Count de Buffon has publiſhed the bird, which he calls the white * Ibis of Egypt, the half of his head crimſon, with a ſtrong beak of a gold colour, liker to that of a toucan, and long, purple, weak legs, and a thick neck; in ſhort, having none of the characters of the bird it is intended to repreſent.

The

* Buffon, Plan. Enlum. 389.

The reader may be assured there is no such Ibis in Egypt; none ever appeared from the catacombs but what were black and white, as historians have described *, so that this is so disguised by the drawing and colouring as not to be known, or else it came from some other country than Egypt.

MOROC.

I HAVE already said in the introduction which immediately precedes the history of birds, that among those that live upon insects there are some that attach themselves to flies in general, and others that seem to live upon bees alone: Of this last sort is the bird now before us. I never saw him in the low country where the fly is, nor indeed anywhere but in the countries where honey is chiefly produced as revenue, such as the country of the Agow, Goutto, and in Beleſſen.

He

* Vide Plutarch de Iside.

Bee Cuckoo

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He ſeems to purſue the bees for vengeance or diverſion as well as for food, as he leaves a quantity of them ſcattered dead upon the ground without ſeeking further after them, and this paſtime he unweariedly purſues without interruption all the day long; for the Abyſſinians do not look ſo near, or conſider things ſo much in detail, as to imagine all the waſte which he commits can make any difference in their revenue.

His name is Maroc, or Moroc, I ſuppoſe from Mar, honey, though I never heard he was further concerned in the honey than deſtroying the bees. In ſhape and ſize he ſeems to be a cuckoo, but differs from him in other reſpects. He is drawn here of his natural ſize, and in all reſpects ſo minutely attended to, that I ſcarcely believe there is a feather amiſſing.

The opening of his mouth is very wide when forced open, reaching nearly to under his eyes. The inſide of his mouth and throat are yellow, his tongue ſharp-pointed. It can be drawn to almoſt half its length out of its mouth beyond the point of its beak, and is very flexible. Its head and neck are brown, without mixture. It has a number of exceeding ſmall hairs, ſcarcely viſible at the root of his beak. His eye-brows are black likewiſe. His beak is pointed, and very little crooked; the pupil of his eye is black, ſurrounded with an iris of a duſky dull red. The fore part of his neck is light-yellow, darker on each ſide than in the middle, where it is partly white; the yellow on each ſide reaches near the ſhoulder, or round part of the wing; from this his whole breaſt and belly is of a dirty white to under the tail; from this, too, his feathers begin to be tipt gently with

white, as are all thoſe that cover the outſide of his wing; but the white here is clear, and the ſize increaſes with the breadth and length of the feathers. The large feathers of his wing are eight in number, the ſecond in ſize are ſix. The tail conſiſts of twelve feathers; the longeſt three are in the middle, they are cloſely placed together, and the tail is of an equal breadth from top to bottom, and the end of the feathers tipt with white. Its thighs are covered with feathers of the ſame colour as the belly, which reach more than half way down his leg; his legs and feet are black, marked diſtinctly with ſcales. He has two toes before and one behind, each of which have a ſharp and crooked claw. I never ſaw his neſt; but in flying, and while ſitting, he perfectly reſembles the cuckoo. I never heard, nor could I learn from any others, that he had any voice or ſong. He makes a ſharp, ſnapping noiſe, as often as he catches the bees, which is plainly from cloſing his beak.

Jerome Lobo, whom I have often mentioned, deſcribes this bird, and attributes to him a peculiar inſtinct, or faculty of diſcovering honey; he ſays, when this bird has diſcovered any honey he repairs to the high-way, and when he ſees a traveller, he claps with his wings, ſings, and by a variety of actions invites him to follow him, and flying from tree to tree before him, ſtops where the honey is diſcovered to be, and there he begins to ſing moſt melodiouſly.

The ingenious Dr Sparman could not omit an opportunity of building a ſtory upon ſo fair a foundation. He too gives an account of a cuckoo in ſize and ſhape reſembling a ſparrow, and then gives a long deſcription of it in Latin,

from which it ſhould not reſemble a ſparrow. This he calls Cuculus Indicator *. It ſeems it has a partition treaty at once both with men and foxes, not a very ordinary aſſociation.

To theſe two partners he makes his meaning equally known by the alluring ſound, as he calls it, of Tcherr Tcherr, which we may imagine, in the Hottentot language of birds, may ſignify Honey; but it does not ſing, it ſeems, ſo melodiouſly as Jerome Lobo's bird. I cannot for my own part conceive, in a country where ſo many thouſand hives of bees are, that there was any uſe for giving to a bird a peculiar inſtinct or faculty of diſcovering honey, when, at the ſame time, nature had denied him the power of availing himſelf of any advantage from the diſcovery, for man ſeems in this caſe to be made for the ſervice of the Moroc, which is very different from the common ordinary courſe of things; man certainly needs him not, for on every tree and on every hillock he may ſee plenty of combs at his own deliberate diſpoſal. I cannot then but think, with all ſubmiſſion to theſe natural philoſophers, that the whole of this is an improbable fiction, nor did I ever hear a ſingle perſon in Abyſſinia ſuggeſt, that either this, or any other bird, had ſuch a property. Sparman ſays it was not known to any inhabitant of the Cape, no more than that of the Moroc was in Abyſſinia; it was a ſecret of nature, hid from all but theſe two great men, and I moſt willingly leave it among the catalogue of their particular diſcoveries.

* Sparman's voyage, vol. ii. p. 192.

I HAVE only to add, that though Dr Sparman and his learned aſſociates, that feed upon the crumbs from other people's tables, may call this bird a cuckoo, ſtill I hope he will not inſiſt upon correcting my miſtake, as, in the article of the fennec, by ignorantly tacking to it ſome idle fable of his own, that he may name it Cuculus Indicator.

SHEREGRIG.

THIS bird is one of thoſe called Rollier in French; and Rollier in Engliſh, without either nation being able to ſay what is its ſignification in either language. In the French it is the name of a tribe, always as ill delineated as it is deſcribed, becauſe ſcarce ever ſeen by thoſe that either deſcribe, or delineate it; in Latin it is called Merops. Its true name, in its native country, is Sheregrig, and by this name

Sheregrig.

Heath Sc.

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it is known in Syria, and Arabia, and in the low country of Abyſſinia, on the borders of Sennaar, wherever there are meadows, or long graſs, interſperſed with lofty or ſhady trees.

THERE are two different kinds of this bird in Syria conſiderably varying in colours, the brown of the back being conſiderably darker in that of the Syriac, and the blue much deeper, chiefly on its wings; the back of the head likewiſe brown, with very little pale-blue throughout any part of it, and wanting the two long feathers in the tail. It is a fly-catcher, or bee-eater, of which theſe long feathers are the mark. It is ſaid by Dr Shaw, and writers that have deſcribed it, to be of the ſize of a jay, to which indeed the Syrian bird approaches, but this before us ſeems the leaſt of his kind, and weighs half an ounce more than a blackbird. It is conſequently true, as Dr Shaw ſays, that it has a ſmaller bill than a jay, becauſe the bird itſelf is ſmaller, neither is there any diſproportion in the length of its legs. Shaw ſays, it is called Shagarag, which he imagines, by a tranſmutation of letters, to be the ſame with Sharakrak of the Talmudiſts, or Shakarak of the Arabian authors, and is derived from ſharak, to ſhriek or ſquall.

BUT all this learning is very much miſplaced; for from the brightneſs of the colour, it is derived from a word which ſignifies *to ſhine*. Its belly and inſide of its wings are of a moſt beautiful pale blue. The ſhoulder, or top of its wings, a dark blue. The middle of the wing is traverſed by a band of light blue; the extremity of the wing, and the largeſt feathers, are of a dark blue. The two feathers of its tail,

tail, where broad, are of a light blue, but the long ſharp ſingle ones are of a dark blue, like the tips of the wings. Its bill is ſtrong and well made, and has a pencil of hairs as whiſkers. Round where the beak joins the head, the feathers are white; the eye black, and well proportioned, ſurrounded by a light flame-coloured iris. The back is of a very light brown inclining to cream colour, and of a caſt of red. The feet are fleſh-coloured and ſcaly, has three toes before and one behind, each with a ſharp claw.

NOTWITHSTANDING what has been ſaid as to the derivation of its name, I never heard it ſcream or make any ſort of noiſe. It has nothing of the actions of either the magpie or the jay. Buxtorf interprets the ſheregrig by merops the bee-eater, and in ſo doing he is right, when he applies it to this bird, but then he errs in miſtaking another bird for it, called Sirens, a fly-catcher, very common in the Levant, which appear in great numbers, making a ſhrill, ſqualing noiſe in the heat of the day; and of theſe I have ſeen, and deſigned many different ſorts, ſome very beautiful, but they fly in flocks, which the ſheregrig does not; he attaches himſelf equally to ſwarms of bees and flies, which he finds in the woods upon the trees, or in holes in the ground among the high graſs. Of theſe there are great ſwarms of different kinds in the low part of Abyſſinia.

THE Count de Buffon has publiſhed two figures of this bird, one from a ſpecimen I gave him from Abyſſinia *, the other from one ſtuffed, which he received from Senegal †, ſo

* Buffon, plan. enlum. 626. † Buffon, plan. enlum. 326.

ſo that we know the bird poſſeſſes the whole breadth of Africa nearly on a parallel. I may be allowed to ſay, that, when I gave him mine, I did not expect he would ſo far have anticipated my publication as to have exhibited it as a part of the king's cabinet till he had heard my idea of it, and what further I could relate of its hiſtory more than he had learned from ſeeing the feathers of it only. When I ſaw the draught, it put me in mind of the witty poem of Martial: A man had ſtole ſome of his verſes, but read them ſo ill, that the poet could not underſtand them well enough to know they were his own—

Sed male dum recitas incipit eſſe tuum.

The bird is ſo ill-deſigned that it may paſs for a different ſpecies. It is too ſhort in the body; too thick; its neck too ſhort and thick; its legs, the pupil and iris of the eye, of a wrong colour; its tail affectedly ſpread. Theſe are the conſequences of drawing from ſtuffed ſubjects. The brown upon the back is too dark, the light-blue too pale, too much white upon the ſide of its head. Theſe are the conſequences of having a bad painter; and the reader, by comparing my figure with thoſe drawn by Martinet in Buffon, may eaſily perceive how very little chance he has to form a true idea of any of theſe birds, if the difference is as great between his other drawings and the original, as between my drawing and his. De Seve would have given it a juſter picture.

WAALIA.

WAALIA.

THIS pigeon, called Waalia, frequents the low parts of Abyſſinia, where it perches upon the higheſt trees, and ſits quietly in the ſhade during the heat of the day, ſo that it is difficult to diſcover it, unleſs it has been ſeen to alight. They likewiſe fly extremely high, in great flocks, and for the moſt part affect a ſpecies of the beech-tree, upon the maſt or fruit of which they ſeem chiefly to live for food. They are rarely ſeen in the mountainous part of the country unleſs in their paſſage, for in the beginning of the rainy ſeaſon, in the Kolla, they emigrate to the ſouth and S. W. In this direction they are ſeen flying for days together. It is ſuppoſed the high country, even in the fair ſeaſon, is too cold for them; and their ſeeking another habitation towards the Atlantic Ocean, where it is warm, and where the rains do not fall ſo copiouſly in that ſeaſon as they do in the Kolla in Abyſſinia, makes this conjecture ſtill more probable.

Waalia

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They perch for moſt part upon the tops of trees, beyond the ſphere of the action of Abyſſinian powder; but they ſit ſo cloſe together that I have ſometimes ſhot ſix or more at the diſcharge of a ſingle barrel. The reſt immediately plunge down almoſt to touch you, apparently ignorant whence ſo unaccuſtomed a ſound comes; there, if you are a good markſman, and alert, you have another chance, though but a ſhort one, for they immediately tower to an immoderate height, and never alight in ſight unleſs they are wounded. They are exceedingly fat, and by far the beſt of all pigeons; when they fall from a height, without life, upon their back, I have known the fleſh on each ſide of their breaſt-bone ſeparated by the concuſſion, and the fat upon their rump bruiſed like the pulp of an orange.

Although this is undoubtedly a pigeon, the Abyſſinians do not eat it; nay, after it is dead they will not touch it, for fear of defiling themſelves, any more than they would do a dead horſe. The waalia is leſs than the common blue pigeon, but larger than the turtle-dove. Its whole back, and ſome of the ſhort feathers of its wings, are of a beautiful unvarniſhed green, lighter and livelier than an olive. Its head and neck are of a deader green, with ſtill leſs luſtre. Its beak is of a bluiſh white, with large noſtrils; the eye black, with an iris of dark orange. The pinion, or top of its wing, is a beautiful pompadour. The large feathers of the wing are black; the outer edge of the wing narrowly marked with white; the tail a pale, dirty blue; below the tail it is ſpotted with brown and white. Its thighs are white, with ſmall ſpots of brown; its belly a lively yellow. Its legs and feet are a yellowiſh brown. Its feet ſtronger and larger than is generally found in this kind of bird. I

never heard it coo, or make any noiſe. I killed this, and many others, in our road to Tcherkin. In M. de Buffon's collection I ſee a bird reſembling this, coming from the weſt of Africa, as I remember; but his birds in general are ſo very ill-drawn, and his coloured ones ſo ſhamefully daubed, that nothing certain can be founded upon reſemblance.

TSALTSALYA, OR FLY.

THE inſect which we have here before us is a proof how fallacious it is to judge by appearances. If we conſider its ſmall ſize, its weakneſs, want of variety or beauty, nothing in the creation is more contemptible and inſignificant. Yet paſſing from theſe to his hiſtory, and to the account of his powers, we muſt confeſs the very great injuſtice we do him from want of conſideration. We are

Tsaltsalya.

El Adda.

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are obliged, with the greateſt ſurpriſe, to acknowledge, that thoſe huge animals, the elephant, the rhinoceros, the lion and the tiger, inhabiting the ſame woods, are ſtill vaſtly his inferiors, and that the appearance of this ſmall inſect, nay, his very ſound, though he is not ſeen, occaſions more trepidation, movement, and diſorder, both in the human and brute creation, than would whole herds of theſe monſtrous animals collected together, though their number was in a tenfold proportion greater than it really is.

The neceſſity of keeping my narrative clear and intelligible as I proceeded, has made me anticipate the principal particularities relating to this inſect. His operations are too materially interwoven with the hiſtory of this country, to be left apart as an epiſode. The reader will find the * deſcription of its manners in that part of my hiſtory which treats of the Shepherds, and in ſeveral places throughout the narrative he will meet with accounts of the conſequences of its wonderful influence. Providence, from the beginning it would ſeem, had fixed its habitation to one ſpecies of ſoil, being a black fat earth, extraordinary fruitful; and ſmall and inconſiderable as it was, it ſeems from the firſt to have given a law to the ſettlement of the country. It prohibited abſolutely thoſe inhabitants of the fat earth, called Mazaga, domiciled in caves and mountains, from enjoying the help or labour of any beaſts of carriage. It deprived them of their fleſh and milk for food, and gave riſe to another nation, whoſe manners were juſt the reverſe of the firſt. Theſe were the Shepherds, leading a wandering

* Vol. i. book 2. p. 388.

life, and preſerving theſe immenſe herds of cattle by conducting them into the ſands beyond the limits of the black earth, and bringing them back again when the danger from this inſect was over.

We cannot read the hiſtory of the plagues which God brought upon Pharaoh by the hands of Moſes, without ſtopping a moment to conſider a ſingularity, a very principal one, which attended this plague of the fly. It was not till this time, and by means of this inſect, that God ſaid, he would ſeparate his people from the Egyptians. And it would ſeem, that then a law was given to them, that fixed the limits of their habitation. It is well known, as I have repeatedly ſaid, that the land of Goſhen, or Geſhen, the poſſeſſion of the Iſraelites, was a land of paſture, which was not tilled or ſown, becauſe it was not overflowed by the Nile. But the land overflowed by the Nile was the black earth of the valley of Egypt, and it was here that God confined the flies; for he ſays, it ſhall be a ſign of this ſeparation of the people, which he had then made, that not one fly ſhould be ſeen in the ſand or paſture ground, the land of Goſhen, and this kind of ſoil has ever ſince been the refuge of all cattle emigrating from the black earth to the lower part of Atbara. Iſaiah, indeed, ſays, that the fly ſhall be in all the deſert places, and conſequently the ſands; yet this was a particular diſpenſation of providence, to anſwer a ſpecial end, the deſolation of Egypt, and was not a repeal of the general law, but a confirmation of it; it was an exception, for a particular purpoſe, and a limited time.

I HAVE

I HAVE already ſaid ſo much of this inſect, that it would be tiring my reader's patience to repeat any thing concerning him. I ſhall therefore content myſelf, by giving a very accurate deſign of him, only obſerving, that, for diſtinctneſs ſake, I have magnified him ſomething above twice the natural ſize. He has no ſting, though he ſeems to me to be rather of the bee kind; but his motion is more rapid and ſudden than that of the bee, and reſembles that of the gad-fly in England. There is ſomething particular in the ſound, or buzzing of this inſect. It is a jarring noiſe, together with a humming; which induces me to believe it proceeds, at leaſt in part, from a vibration made with the three hairs at his ſnout.

THE Chaldee verſion is content with calling this animal ſimply Zebub, which ſignifies the fly in general, as we expreſs it in Engliſh. The Arabs call it Zimb in their tranſlation, which has the ſame general ſignification. The Ethiopic tranſlation calls it Tſaltſalya, which is the true name of this particular fly in Geez, and was the ſame in Hebrew.

THE Greeks have called this ſpecies of fly Cynomya, which ſignifies the dog-fly, in imitation of which, thoſe, I ſuppoſe, of the church of Alexandria, that, after the coming of Frumentius, were correcting the Greek copy, and making it conformable to the Septuagint, have called this fly Tſaltſalya Kelb, to anſwer the word Cynomya, which is dog-fly. But this at firſt ſight is a corruption, apparently the language of ſtrangers, and is not Ethiopic. It is the ſame as if we were to couple the two nominative ſubſtantives Canis and Muſca, to tranſlate Cynomya. Canis is indeed a dog, and Muſca is a fly, but theſe two words together, as I have now wrote them, could never be brought to ſignify dog-fly. It is

the ſame in the Ethiopic, where Tſaltſalya alone ſignifies dog-fly, without the addition of any other word whatever. What is the derivation of this is doubtful, becauſe there are ſeveral words, both in the Ethiopic and Hebrew, that are exceedingly appoſite and probable. Salal, in the Hebrew, ſignifies to buzz, or to hum, and, as it were, alludes to the noiſe with which this animal terrifies the cattle: and Tſaltſalya ſeems to come from this, by only doubling the radicals. t'Tſalalou, in Amharic, ſignifies to pierce with violence; from this is derived Tſalatie, the name of a javelin with a round point, made to enter the rings of a coat of mail, which, by its ſtructure, is impervious to the round cutting points of the ordinary lance or javelin. In the book of Job* this ſeems to mean a trident, or fiſhing-ſpear, and is vaguely enough tranſlated Habergeon in the Engliſh copy. I do not know that this inſect, however remarkable for its activity and numbers, has ever before been deſcribed or delineated.

EL

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* Chap. xli. ver. 26.

EL ADDA.

THERE is no genus of quadrupeds that I have known in the eaſt ſo very numerous as that of the lizard, or of which there are ſo many varieties. The eaſtern, or deſert parts of Syria, bordering upon Arabia Deſerta, which ſtill have moiſture ſufficient, abound with them beyond a poſſibility of counting them. I am poſitive that I can ſay, without exaggeration, that the number I ſaw one day in the great court of the Temple of the Sun at Baalbec amounted to many thouſands; the ground, the walls and ſtones of the ruined buildings, were covered with them, and the various colours of which they conſiſted made a very extraordinary appearance, glittering under the ſun, in which they lay ſleeping, or baſking. It was in vain, in a place ſo full of wonders as Baalbec, to think of ſpending time in deſigning lizards. I contented myſelf with collecting and preſerving thoſe I could catch entire, many of which have periſhed

riſhed by the accidents of the journey, though ſome of very great beauty have eſcaped, and are in my collection in great preſervation.

As I went eaſtward towards the deſert, the number of this animal decreaſed, I ſuppoſe, from a ſcarcity of water; for example, at Palmyra, tho' there were ruins of ancient buildings, and a great ſolitude, as at Baalbec, the lizards were few, all of the colour of the ground, without beauty or variety, and ſeemingly degenerated in point of ſize.

The Arabian naturaliſts and phyſicians were better acquainted with the different ſpecies of this animal than any philoſphers have been ſince, and in all probability than any ſtrangers will ever be; they lived among them, and had an opportunity of diſcovering their manners and every detail of their private œconomy. Happy if ſucceeding the Greeks in theſe ſtudies, they had not too frequently left obſervation to deviate into fable; the field, too, which theſe various ſpecies inhabit is a very extenſive one, and comprehends all Aſia and Africa, that is, great portion of the old world, every part of which is, from various cauſes, more inacceſſible at this day, than after the Arabian conqueſt. It is from the Arabian books then that we are to ſtudy with attention the deſcriptions given of the animals of the country. But very great difficulties occur in the courſe of theſe diſquiſitions. The books that contain them are ſtill extant, and all the animals likewiſe exiſt as before; but, unfortunately, the Hebrew, the Syriac, and the Arabic, are languages very ambiguous and equivocal, and are in terms too looſe and vague for modern accuracy and preciſe deſcription, and eſpecially ſo in that of colours; beſides, that unbounded liberty of tranſ-

poſition

poſition of letters, and ſyllables of words, in which the writers of thoſe languages have indulged themſelves, from notions of elegance, ſeem to require, not only a very ſkilful and attentive, but alſo a judicious and ſober-minded reader, that does not run away with whimſical, or firſt conceptions, but weighs the character of his author, the common idioms of language which he uſes, and opportunities of information that he had concerning the ſubjects upon which he wrote, in preference to others that may have treated the ſame, but who differ from them in facts.

The ſmall lizard here deſcribed is a native of Atbara beyond the rains, in that ſituation where we have ſaid the iſland and city of Meroë formerly were. It ſeemed alſo to be well known by the different black inhabitants that came from the weſtward by the great caravan which croſſed the deſert north of the Niger, and is called the Caravan of Sudan, of which I have often ſpoken, as being the only barbarians who ſeem to pay the leaſt attention to any articles of natural hiſtory. Theſe bring to Cairo, and to Mecca, multitudes of green paroquets, monkeys, weaſels, mice, lizards, and ſerpents, for the diverſion and curioſity of the men of note in Arabia, or of the Beys and the women of the great at Cairo. This lizard is called El Adda, it burrows in the ſand, and performs this operation ſo quickly, that it is out of ſight in an inſtant, and appears rather to have found a hole, than to have made one, yet it comes out often in the heat of the day, and baſks itſelf in the ſun; and if not very much frightened, will take refuge behind ſtones, or in the withered, ragged roots of the abſinthium, dried in the ſun to nearly its own colour.

ALMOST the whole of this large tribe of lizards is, by the Arabians, deſcribed as poiſonous. Experiment has detected the falſehood of this, in very many ſpecies; the ſame idea has led them to attribute to them medicinal virtues in the ſame proportion, and, I am apt to believe, with nearly as little reaſon; at leaſt, though the books preſcribing them are in everybody's hands, the remedy is not now made uſe of in the places where thoſe books were wrote; and this affords a ſtrong proof that the medicine was never very efficacious.

THE El Adda is one of the few which the Arabs in all times have believed to be free of poiſonous qualities, and yet to have all the medicinal virtues that they have ſo abundantly laviſhed upon the more noxious ſpecies. It has been reputed to be a cure for that moſt terrible of all diſeaſes, the Elephantiaſis; yet this diſtemper is not, that I know, in the hotter parts of Africa, and certainly this lizard is not an inhabitant of the higher or colder parts of Abyſſinia, which we may call excluſively the domicil of the elephantiaſis. It is likewiſe thought to be efficacious in cleanſing the ſkin of the body, or face, from cutaneous eruptions, of which the inhabitants of this part of Africa are much more afraid than they are of the plague; it is alſo uſed againſt films, and ſuffuſions on the eyes. I never did try the effect of any of theſe, but give their hiſtory ſolely upon the authority of the Arabian authors.

I HAVE drawn it here of its natural ſize, which is $6\frac{1}{8}$ inches. Though its legs are very long, it does not make uſe of them to ſtand upright, but creeps with its belly almoſt cloſe to the ground. It runs, however, with very great ve-

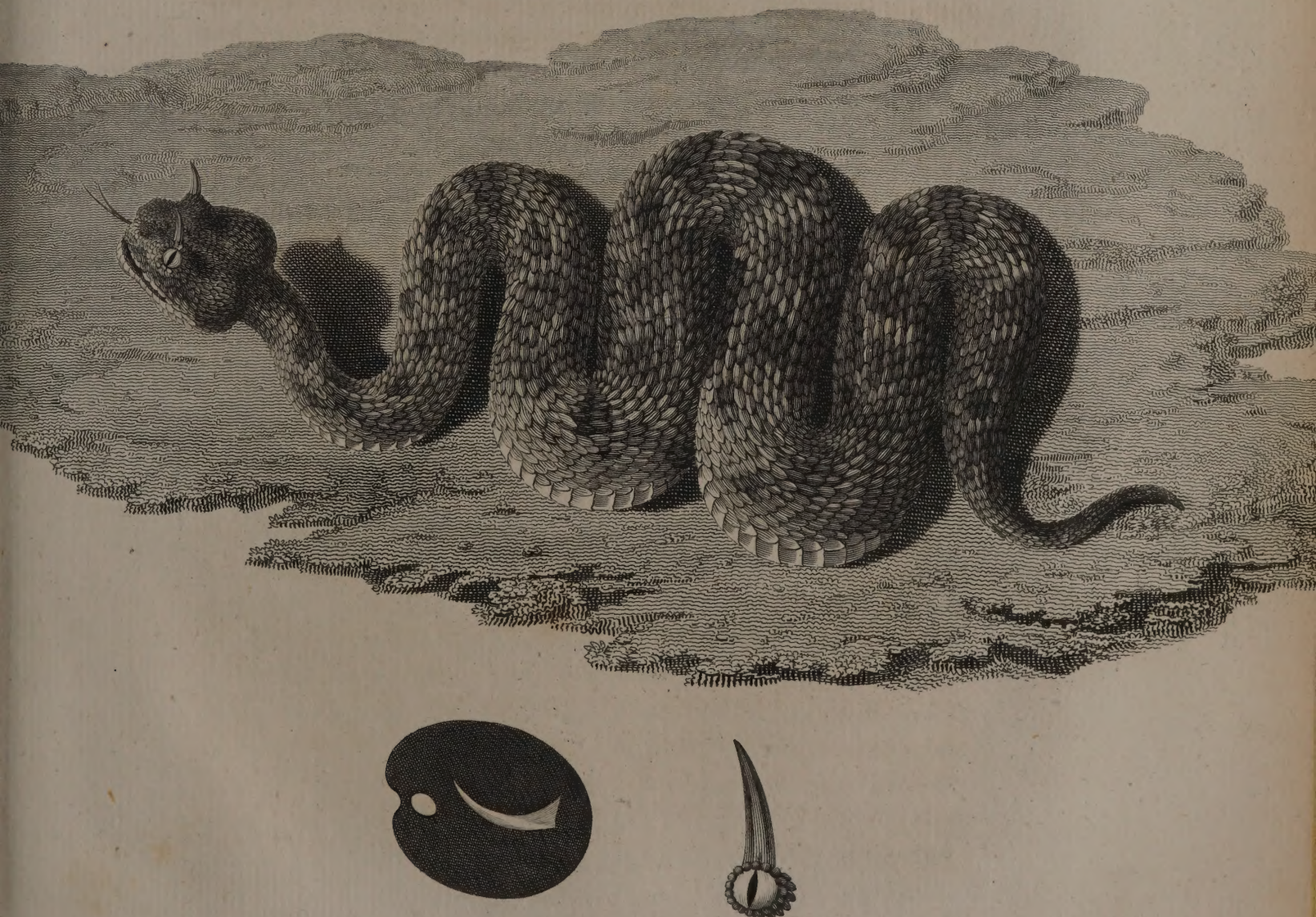
locity. It is very long from its ſhoulder to its noſe, being nearly two inches. Its body is round, having ſcarce any flatneſs in its belly. Its tail too is perfectly round, having no flatneſs in its lower part. It is exceedingly ſharp-pointed, and very eaſily broke, yet I have ſeen ſeverals where the part broke off has been renewed ſo as ſcarcely to be diſcernible. It is the ſame length, $2\frac{1}{8}$ inches, between the point of the tail and the joint of the hinder leg, as was between the noſe and the ſhoulder of the foreleg. Its forehead from the occiput is flat, its ſhape conical, not pointed, but rounded at the end in the ſhape of ſome ſhovels or ſpades. The head is darker than the body, the occiput darker ſtill; its face is covered with fine black lines, which croſs one another at right angles like a net. Its eyes are ſmall, defended with a number of ſtrong black hairs for eye-laſhes. Its upper jaw is longer, and projects conſiderably over the under; both its jaws have a number of ſhort, fine, but very feeble teeth, and when holding it in my hand, though it ſtruggled violently to get looſe, it never attempted to make uſe of its teeth; indeed it ſeems to turn its neck with great difficulty. Its ears are large, open, and nearly round. Its body is a light-yellow, bordering on a ſtraw-colour, croſſed with eight bands of black, almoſt equally diſtant, except the two next the tail. All theſe decreaſe both in breadth and length from the middle towards each extremity of the animal. The ſcales are largeſt along the back, they are very cloſe, though the diviſions are ſufficiently apparent. Their ſurface is very poliſhed, and ſeems as if varniſhed over. Its legs from the ſhoulder to the middle toe are nearly an inch and three quarters long; its feet are compoſed of five toes, the extremity of each is armed with

a brown claw of no great ſtrength, whoſe end is tipt with black.

I HAVE heard ſome of the common people call this lizard Dhab: This we are to look upon as an inſtance of ignorance in the vulgar, rather than the opinion of a naturaliſt well informed; for the Dhab is a ſpecies perfectly well known to be different from this, and is frequently met with in the deſerts which ſurround Cairo.

CERASTES, OR HORNED VIPER.

THERE is no article of natural hiſtory the ancients have dwelt on more than that of the viper, whether poets, phyſicians, or hiſtorians. All have enlarged upon the particular ſizes, colours, and qualities, yet the knowledge of their manners is but little extended. Almoſt every author that has treated of them, if he hath advanced ſome truths which he has left ſlenderly eſtabliſhed by proof or experiment, by way of



Cerastes.

Heath Sc.

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compenſation, hath added as many falſehoods ſo ſtrongly aſſerted, that they have occaſioned more doubt than the others have brought of light, certainty, and conviction.

LUCAN, in Cato's march through the deſert of the Cyrenaicum in ſearch of Juba, gives ſuch a catalogue of theſe venomous animals, that we cannot wonder, as he inſinuates, that great part of the Roman army was deſtroyed by them; yet I will not ſcruple to aver this is mere fable. I have travelled acroſs the Cyrenaicum in all its directions, and never ſaw but one ſpecies of viper, which was the Ceraſtes, or Horned Viper, now before us. Neither did I ever ſee any of the ſnake kind that could be miſtaken for the viper. I apprehend the ſnake cannot ſubſiſt without water, as the Ceraſtes, from the places in which he is found, ſeems aſſuredly to do. Indeed thoſe that Lucan ſpeaks of muſt have been all vipers, becauſe the mention of every one of their names is followed by the death of a man.

THERE are no ſerpents of any kind in Upper Abyſſinia that ever I ſaw, and no remarkable varieties even in Low, excepting the large ſnake called the Boa, which is often above twenty feet in length, and as thick as an ordinary man's thigh. He is a beaſt of prey, feeds upon antelopes, and the deer kind, which having no canine teeth, conſequently no poiſon, he ſwallows whole, after having broken all its bones in pieces, and drawn it into a length to be more eaſily maſtered. His chief reſidence is by the graſſy pools of rivers that are ſtagnant. Notwithſtanding which, we hear of the Monk Gregory telling M. Ludolf, that ſerpents were ſo frequent in Abyſſinia, that every man carried with him a ſtick bent in a particular manner, for the more commodiouſly

modiouſly killing theſe creatures, and this M. Ludolf recommends as a diſcovery. And Jerome Lobo, among the reſt of his fables, has ſome on this ſubject likewiſe. A cold and rainy country can never be a habitation for vipers. We ſee, on the contrary, that their favourite choice are deſerts and burning ſand, without verdure, and without any moiſture whatever.

The very learned, though too credulous, Proſper Alpinus, ſays, that many have aſſured him, that near the lakes contiguous to the ſources of the Nile there is a number of baſiliſcs, about a palm in length, and the thickneſs of a middle finger; that they have two large ſcales, which they uſe as wings, and creſts and combs upon their head, from which they are called Baſiliſci or Reguli, that is, crowned, creſted, or kingly ſerpents; and he ſays that no perſonn ca approach theſe lakes without being deſtroyed by theſe creſted ſnakes.

With all ſubmiſſion to this naturaliſt's relation, I ſhould imagine he could not have heard the deſcription of theſe lakes from many travellers, if all thoſe that approached them were killed by the baſiliſcs. I ſhall only anſwer for this, that having examined the Lake Gooderoo, thoſe of Court Ohha, and Tzana, the only lakes near the ſources of the Nile, I never yet ſaw one ſerpent there, whether crowned or uncrowned, nor did I ever hear of any, and therefore believe this account as fabulous as that of the Acontia and other animals he ſpeaks of in this whole chapter *. The baſiliſc is a ſpecies of ſerpent, frequently made mention of in ſcripture,

* Proſp. Alpin. lib. iv. cap. 4.

ſcripture, though never deſcribed, farther than that he cannot be charmed ſo as to do no hurt, nor trained ſo as to delight in muſic; which all travellers who have been in Egypt know is exceedingly poſſible, and frequently ſeen. "For, behold, I will ſend baſiliſcs among you, ſaith the ſcripture, which will not be charmed, and they ſhall bite you, ſaith the Lord†". And‡ "Thou ſhalt tread upon the lion and baſiliſc‖ &c.

I SHALL mention one name more, under which the Ceraſtes goes, becauſe it is equivocal, and has been miſunderſtood in ſcripture, that is Tſeboa, which name is given it in the Hebrew, from its different colours and ſpots. And hence the Greeks § have called it by the name of Hyæna, becauſe it is of the ſame reddiſh colour, marked with black ſpots as that quadruped is. And the ſame fable is applied to the ſerpent and quadruped, that they change their ſex yearly.

SOME philoſophers, from particular ſyſtem, have judg'd from a certain diſpoſition of this animal's ſcales, that it is what they term, Coluber, while others, from ſome arrangement of the ſcales of its tail, will have it to be what they call Boa. I enter not into the diſpute, it is here as faithfully repreſented as the ſize will permit, only I ſhall obſerve that, unleſs

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† Jerem. chap. viii. ver. 17. ‡ Pſalm ix. ver. 13.

‖ It is to be obſerved here, it is the Greek text that calls it Baſiliſc. The Hebrew for the moſt part calls it Tſepha, which are a ſpecies of ſerpents real and known. Our Engliſh tranſlation, very improperly, renders it Cockatrice; a fabulous animal, that never did exiſt. I ſhall only further obſerve, that the baſiliſc, in ſcripture, would ſeem to be a ſnake, not a viper, as there are frequent mention made of their eggs, as in Iſaiah, chap. lix. ver. 5. whereas, it is known to be the characteriſtic of the viper to bring forth living young.

§ Elian. Hiſt. lib. i. cap. 25. Horia. hieroglyph. lib. ii. chap. 65.

unleſs Boa means ſomething more than I know it does, the name is ill choſen when applied to any ſpecies of poiſonous ſerpents, becauſe it is already the proper name of the large ſnake, juſt mentioned, that is not viviparous, and has no poiſon. Pliny and Galen ſay, that the young vipers are ſo fierce as to become parricides, and deſtroy their mother upon their birth. But this is ſurely one of the ill-grounded fancies theſe authors have adopted. The Ceraſtes is mentioned by name in Lucan, and without warranting the ſeparate exiſtence of any of the reſt, I can ſee ſeveral that are but the Ceraſtes under another term. The thebanus ophites, the ammodytes, the torrida dipſas, and the preſter *, all of them are but this viper deſcribed from the form of its parts, or its colours. Cato muſt have been marching in the night when he met this army of ſerpents. The Ceraſtes hides itſelf all day in holes in the ſand, where it lives in contiguous and ſimilar houſes to thoſe of the jerboa, and I have already ſaid, that I never but once found any animal in this viper's belly, but one jerboa in a gravid female ceraſtes.

I KEPT two of theſe laſt-mentioned creatures in a glaſs jar, ſuch as is uſed for keeping ſweetmeats, for two years, without having given them any food; they did not ſleep, that I obſerved, in winter, but caſt their ſkins the laſt days of April.

THE Ceraſtes moves with great rapidity, and in all directions, forward, backward, and ſideways. When he inclines to ſurpriſe any one who is too far from him, he creeps with his

* Lucan. lib. ix.

his ſide towards the perſon, and his head averted, till judging his diſtance, he turns round, ſprings upon him, and faſtens upon the part next to him; for it is not true what is ſaid, that the Ceraſtes does not leap or ſpring. I ſaw one of them at Cairo, in the houſe of Julian and Roſa, crawl up the ſide of a box, in which there were many, and there lye ſtill as if hiding himſelf, till one of the people who brought them to us came near him, and though in a very diſadvantageous poſture, ſticking as it were perpendicular to the ſide of the box, he leaped near the diſtance of three feet, and faſtened between the man's forefinger and thumb, ſo as to bring the blood. The fellow ſhewed no ſigns of either pain or fear, and we kept him with us full four hours, without his applying any ſort of remedy, or his ſeeming inclined to do ſo.

To make myſelf aſſured that the animal was in its perfect ſtate, I made the man hold him by the neck ſo as to force him to open his mouth, and lacerate the thigh of a pelican, a bird I had tamed, as big as a ſwan. The bird died in about 13 minutes, though it was apparently affected in 50 ſeconds; and we cannot think this was a fair trial, becauſe a very few minutes before, it had bit the man, and ſo diſcharged part of its virus, and it was made to ſcratch the pelican by force, without any irritation or action of its own.

The Ceraſtes inhabits the greateſt part of the eaſtern continent, eſpecially the deſert ſandy parts of it. It abounds in Syria, in the three Arabias, and in Africa. I never ſaw ſo many of them as in the Cyrenaicum, where the Jerboa is frequent in proportion. He is a great lover of heat; for tho'

the ſun was burning hot all day, when we made a fire at night, by digging a hole, and burning wood to charcoal in it, for dreſſing our victuals, it was ſeldom we had fewer than half a dozen of theſe vipers, who burnt themſelves to death approaching the embers.

I APPREHEND this to be the aſpic which Cleopatra employed to procure her death. Alexandria, plentifully ſupplied by water, muſt then have had fruit of all kinds in its gardens. The baſkets of figs muſt have come from thence, and the aſpic, or Ceraſtes, that was hid in them, from the adjoining deſert, where there are plenty to this day; for to the weſtward in Egypt, where the Nile overflows, there is no ſort of ſerpent whatever that I ever ſaw; nor, as I have before ſaid, is there any other of the mortal kind that I know in thoſe parts of Africa adjoining to Egypt, excepting the Ceraſtes.

IT ſhould ſeem very natural for any one, who, from motives of diſtreſs, has reſolved to put a period to his exiſtence, eſpecially women and weak perſons unaccuſtomed to handle arms, to ſeek the gentleſt method to free themſelves from that load of life now become inſupportable. This, however, has not always been the caſe with the ancients. Aria, Petus's wife, ſtabbed herſelf with a dagger, to ſet her huſband an example to die, with this memorable aſſurance, after giving herſelf the blow, "Petus, it "is not painful." Porcia, the wife of Brutus, died by the barbarous, and not obvious way of periſhing, by ſwallowing fire; the violent agitation of ſpirits prevailing over the momentary difference in the ſuffering. It is not to be doubted but that a woman, high-ſpirited like Cleopatra, was alſo above

the momentary differences in feeling; and had the way in which ſhe died not been ordinary and uſual, ſhe certainly would not have applied herſelf to the invention of a new one. We are therefore to look upon her dying by the bite of the Ceraſtes, as only following the manner of death which ſhe had ſeen commonly adopted by thoſe who were intended to die without torment.

Galen ſpeaking of the Aſpic in the great city of Alexandria, ſays, I have ſeen how ſpeedily they (the aſpics) occaſioned death. Whenever any perſon is condemned to die whom they wiſh to end quickly and without torment, they put the viper to his breaſt, and ſuffering him there to creep a little, the man is preſently killed. Pauſanias ſpeaks of particular ſerpents that were to be found in Arabia among the balſam trees, ſeveral of which I procured both alive and dead, when I brought the tree from Beder Hunein; but they were ſtill the ſame ſpecies of ſerpent, only ſome from ſex, and ſome from want of age, had not the horns, though in every other reſpect they could not be miſtaken. Ibn Sina, called by Europeans Avicenna, has deſcribed this animal very exactly; he ſays it is frequent in Shem (that is the country about and ſouth of Damaſcus) and alſo in Egypt; and he makes a very good obſervation on their manners; that they do not go or walk ſtraight, but move by contracting themſelves. But in the latter part of his deſcription he ſeems not to have known the ſerpent he is ſpeaking of, becauſe he ſays its bite is cured in the ſame manner as that of the viper and Ceraſtes, by which it is implied, that the animal he was deſcribing was not a Ceraſtes, and the Ceraſtes is not a viper, both which aſſertions are falſe.

The general size of the Ceraſtes, from the extremity of its ſnout to the end of its tail, is from 13 to 14 inches. Its head is triangular, very flat, but higher near where it joins the neck than towards the noſe. The length of its head, from the point of the noſe to the joining of the neck, is $\frac{10}{12}$ths of an inch, and the breadth $\frac{9}{12}$ths. Between its horns is $\frac{3}{12}$ths. The opening of its mouth, or rictus oris $\frac{8}{12}$ths. Its horns in length $\frac{3}{12}$ths. Its large canine teeth ſomething more than $\frac{2}{12}$ths and $\frac{1}{2}$. Its neck at the joining of the head $\frac{4}{12}$ths. The body where thickeſt $\frac{10}{12}$ths. Its tail at the joining of the body $\frac{2}{12}$ths and $\frac{1}{2}$. The tip of the tail $\frac{1}{12}$th. The length of the tail one inch and $\frac{3}{12}$ths. The aperture of the eye $\frac{2}{12}$ths, but this varies apparently according to the impreſſion of light.

The Ceraſtes has ſixteen ſmall immoveable teeth, and in the upper jaw two canine teeth, hollow, crooked inward, and of a remarkable fine poliſh, white in colour, inclining to blueiſh. Near one fourth of the bottom is ſtrongly fixed in the upper jaw, and folds back like a claſp knife, the point inclining inwards, and the greateſt part of the tooth is covered with a green ſoft membrane, not drawn tight, but as it were wrinkled over it. Immediately above this is a ſlit along the back of the tooth, which ends nearly in the middle of it, where the tooth curves inwardly. From this aperture I apprehend that it ſheds its poiſon, not from the point, where with the beſt glaſſes I never could perceive an aperture, ſo that the tooth is not a tube, but hollow only half way; the point being for making the inciſion, and by its preſſure occaſioning the venom in the bag at the bottom of the fang to riſe in the tooth, and ſpill itſelf through the ſlit into the wound.

By

By this flat poſition of the tooth along the jaw, and its being defended by the membrane, it eats in perfect ſafety; for the tooth cannot preſs the bag of poiſon at the root while it lies in this poſition, nor can it riſe in the tube to ſpill itſelf, nor can the tooth make any wound ſo as to receive it, but the animal is ſuppoſed to eat but ſeldom, or only when it is with young.

The viper has but one row of teeth, none but the canine are noxious. The poiſon is very copious for ſo ſmall a creature, it is fully as large as a drop of laudanum dropt from a vial by a careful hand. Viewed through a glaſs, it appears not perfectly tranſparent or pellucid. I ſhould imagine it hath other reſervoirs than the bag under the tooth, for I compelled it to ſcratch eighteen pigeons upon the thigh as quick as poſſible, and they all died nearly in the ſame interval of time; but I confeſs the danger attending the diſſection of the head of this creature made me ſo cautious, that any obſervation I ſhould make upon theſe parts would be leſs to be depended upon.

People have doubted whether or not this yellow liquor is the poiſon, and the reaſon has been, that animals who had taſted it did not die as when bitten, but this reaſon does not hold in modern phyſics. We know why the ſaliva of a mad dog has been given to animals and has not affected them; and a German phyſician was bold enough to diſtil the pus, or putrid matter, flowing from the ulcer of a perſon infected by the plague, and taſte it afterwards without bad conſequences; ſo that it is clear the poiſon has no activity, till through ſome ſore or wound it is admitted into circulation. Again, the tooth itſelf, diveſted of

that poiſon, has as little effect. The viper deprived of his canine teeth, an operation very eaſily performed, bites without any fatal conſequence with the others; and many inſtances there have been of mad dogs having bit people cloathed in coarſe woollen ſtuff, which had ſo far cleaned the teeth of the ſaliva in paſſing through it, as not to have left the ſmalleſt inflammation after the wound.

I FORBEAR to fatigue the reader by longer inſiſting upon this ſubject. A long diſſertation would remain upon the incantation of ſerpents. There is no doubt of its reality. The ſcriptures are full of it. All that have been in Egypt have ſeen as many different inſtances as they choſe. Some have doubted that it was a trick, and that the animals ſo handled had been firſt trained, and then diſarmed of their power of hurting; and fond of the diſcovery, they have reſted themſelves upon it, without experiment, in the face of all antiquity. But I will not heſitate to aver, that I have ſeen at Cairo (and this may be ſeen daily without trouble or expence) a man who came from above the catacombs, where the pits of the mummy birds are kept, who has taken a Ceraſtes with his naked hand from a number of others lying at the bottom of the tub, has put it upon his bare head, covered it with the common red cap he wears, then taken it out, put it in his breaſt, and tied it about his neck like a necklace; after which it has been applied to a hen, and bit it, which has died in a few minutes; and, to complete the experiment, the man has taken it by the neck, and beginning at his tail, has ate it as one would do a carrot or a ſtock of celery, without any ſeeming repugnance.

WE

We know from hiſtory, that where any country has been remarkably infeſted with ſerpents, there the people have been ſcreened by this ſecret. The Pſylli and Marmarides of old undoubtedly were defended in this manner,

Ad Quorum cantus mites jacuêre Ceraſtæ.

SIL. ITAL. lib. iii.

To leave ancient hiſtory, I can myſelf vouch, that all the black people in the kingdom of Sennaar, whether Funge or Nuba, are perfectly armed againſt the bite of either ſcorpion or viper. They take the Ceraſtes in their hands at all times, put them in their boſoms, and throw them to one another as children do apples or balls, without having irritated them, by this uſage ſo much as to bite. The Arabs have not this ſecret naturally, but from their infancy they acquire an exemption from the mortal conſequences attending the bite of theſe animals, by chawing a certain root, and waſhing themſelves (it is not anointing) with an infuſion of certain plants in water.

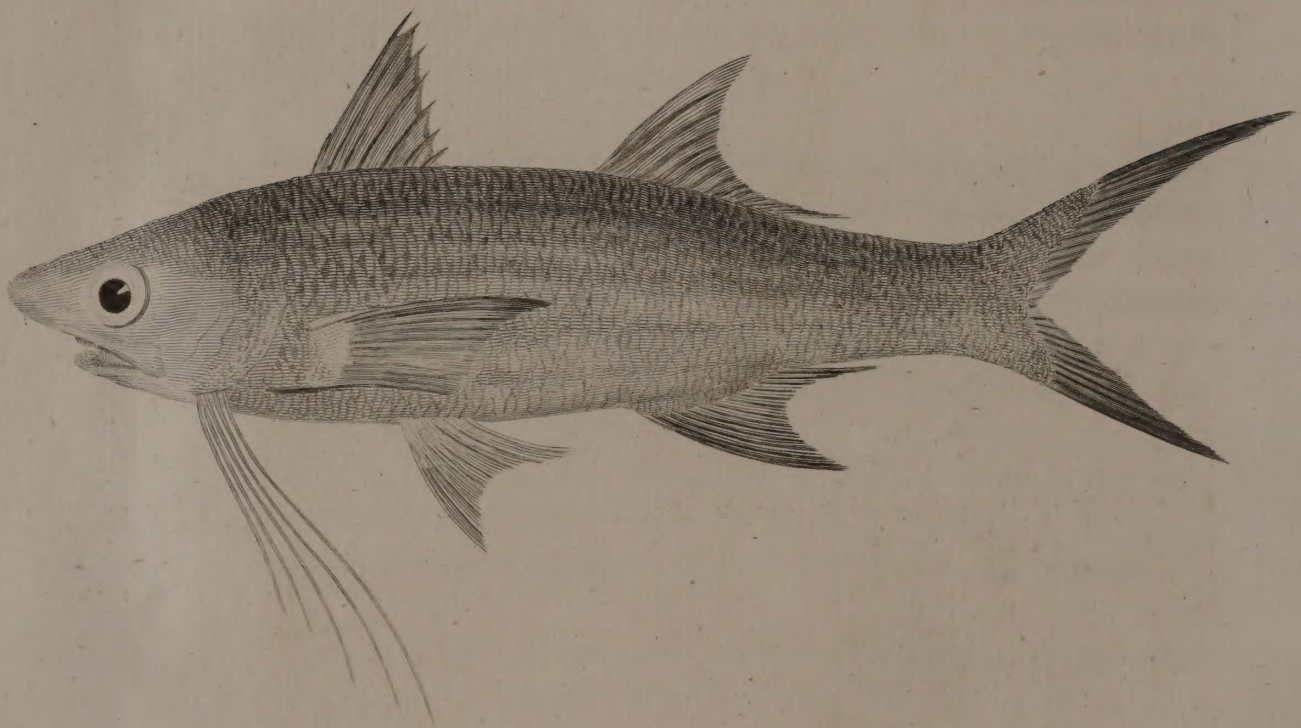
One day when I was with the brother of Shekh Adelan, prime miniſter of Sennaar, a ſlave of his brought a Ceraſtes which he had juſt then taken out of a hole, and was uſing it with every ſort of familiarity. I told him my ſuſpicion that the teeth had been drawn, but he aſſured me they were not, as did his maſter Kittou, who took it from him, wound it round his arm, and at my deſire ordered the ſervant to carry it home with me. I took a chicken by the neck, and made it flutter before him; his ſeeming indifference left him, and he bit it with great ſigns of anger, the chicken died almoſt immediately; I ſay his ſeeming indifference

ference, for I conſtantly obſerved, that however lively the viper was before, upon being ſeized by any of theſe barbarians he ſeemed as if taken with ſickneſs and feebleneſs, frequently ſhut his eyes, and never turned his mouth towards the arm of the perſon that held him. I aſked Kittou how they came to be exempted from this miſchief? he ſaid, they were born ſo, and ſo ſaid the grave and reſpectable men among them. Many of the lighter and lower ſort talked of enchantments by words and by writing, but they all knew how to prepare any perſon by medicine, which were decoctions of herbs and roots.

I HAVE ſeen many thus armed for a ſeaſon do pretty much the ſame feats as thoſe that poſſeſſed the exemption naturally, the drugs were given me, and I ſeveral times armed myſelf, as I thought, reſolved to try the experiment, but my heart always failed me when I came to the trial; becauſe among theſe wretched people it was a pretence they might very probably have ſheltered themſelves under, that I was a Chriſtian, that therefore it had no effect upon me. I have ſtill remaining by me a ſmall quantity of this root, but never had an opportunity of trying the experiment.

THE reader will attend to the horn which is placed over the eye in the manner I have given the figure of it, it is fluted, and has four diviſions. He will likewiſe obſerve the tooth as viewed through a glaſs. He may ſuppoſe the black repreſents a painter's pallet, for the eaſier diſcerning the white tooth, which could not otherwiſe appear diſtinctly upon the white paper.

BINNY.



Binny

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BINNY.

ALTHOUGH the fiſh we find in the eaſt are generally more diſtinguiſhed for their beauty and variety of colours, or for their uncouth forms, rather than for the goodneſs of the fiſh itſelf, this before us appears to be an exception; though it is not without ſingularities, yet its form and colour are very ſimple, and, for the elegance of its taſte, may vie with any fiſh caught in any river which runs either into the Mediterranean or Ocean. Whether it is the Latus, or the Oxyrinchus of antiquity, both fiſhes of the Nile, ſo famous that divine honours were paid them, by large cities, nomes, or diſtricts ſituated upon that river, is what I am not naturaliſt enough to diſcover. Such as it is, in all its parts, I have placed it before the reader faithfully.

By the diſproportion in the length of its jaws, I ſhould imagine this to be a fiſh of prey, though a circumſtance concerning the bait with which it is taken ſeems to contradict this. The fiſh from which this drawing was made weighed 32 pounds Engliſh, but is often caught of 70 pounds and upwards, as I have been told by the fiſhermen, for I never ſaw one larger than the one I am now deſcribing. The largeſt of this kind are caught about Roſetto and the mouth of the river, but they are very numerous, higher up as far as Syene and the firſt cataract. This was caught at Achmim, the ancient Panopolis, and the manner in which this is performed is very uncommon and ingenious, and by the few trials that I ſaw is alſo very ſucceſsful.

They take a quantity of oil, clay, flour, and honey, with ſtraw, and ſome other thing that makes it ſtick together, they knead or tread it with their feet till it is perfectly mixed. They then take two handfuls of dates, and break them into ſmall pieces about the bigneſs of the point of the finger, and ſtick them in different parts of this mixture, which begins now to have ſuch conſiſtency as to adhere perfectly together, and appears in form like a Cheſhire cheeſe. In the heart of this cake they put ſeven or eight hooks, with dates upon them, and a ſtring of ſtrong whipcord to each. The fiſherman then takes this large maſs of paſte, and putting it upon a goat's ſkin blown with wind, rides behind it out into the middle of the ſtream; there he drops it in the deepeſt part of the river, then cautiouſly holding the ends of each of the ſtrings ſlack, ſo as not to pull the dates and the hooks out of the heart of the compoſition, he gets again aſhore upon his ſkin a little below where he had ſunk the ſolid maſs.

When arrived on the ſhore, he carefully ſeparates the ends of the ſtrings, and ties them, without ſtraining, each to a palm branch made faſt on ſhore, to the end of every one of which hangs a ſmall bell. He then goes and feeds his cattle, digs ditches, or lies down and ſleeps as his buſineſs calls him. The oil reſiſts the water for ſome time, at laſt the cake begins to diſſolve, pieces fall off, the broken dates dipped in the honey flow down the ſtream, and the large fiſh below catch ravenouſly at them as they paſs. The fiſh follow theſe pieces up the ſtream, gathering them as they go along till they get to the cake at laſt, when altogether, as many as are aſſembled, fall voraciouſly to ſeek the dates buried in the compoſition; each fiſh that finds a date ſwallows it, together with an iron hook, and feeling himſelf faſt, makes off as ſpeedily as poſſible; the conſequence is, endeavouring to eſcape from the line by which he is faſtened, he pulls the palm branch, and rings the bell faſtened to it.

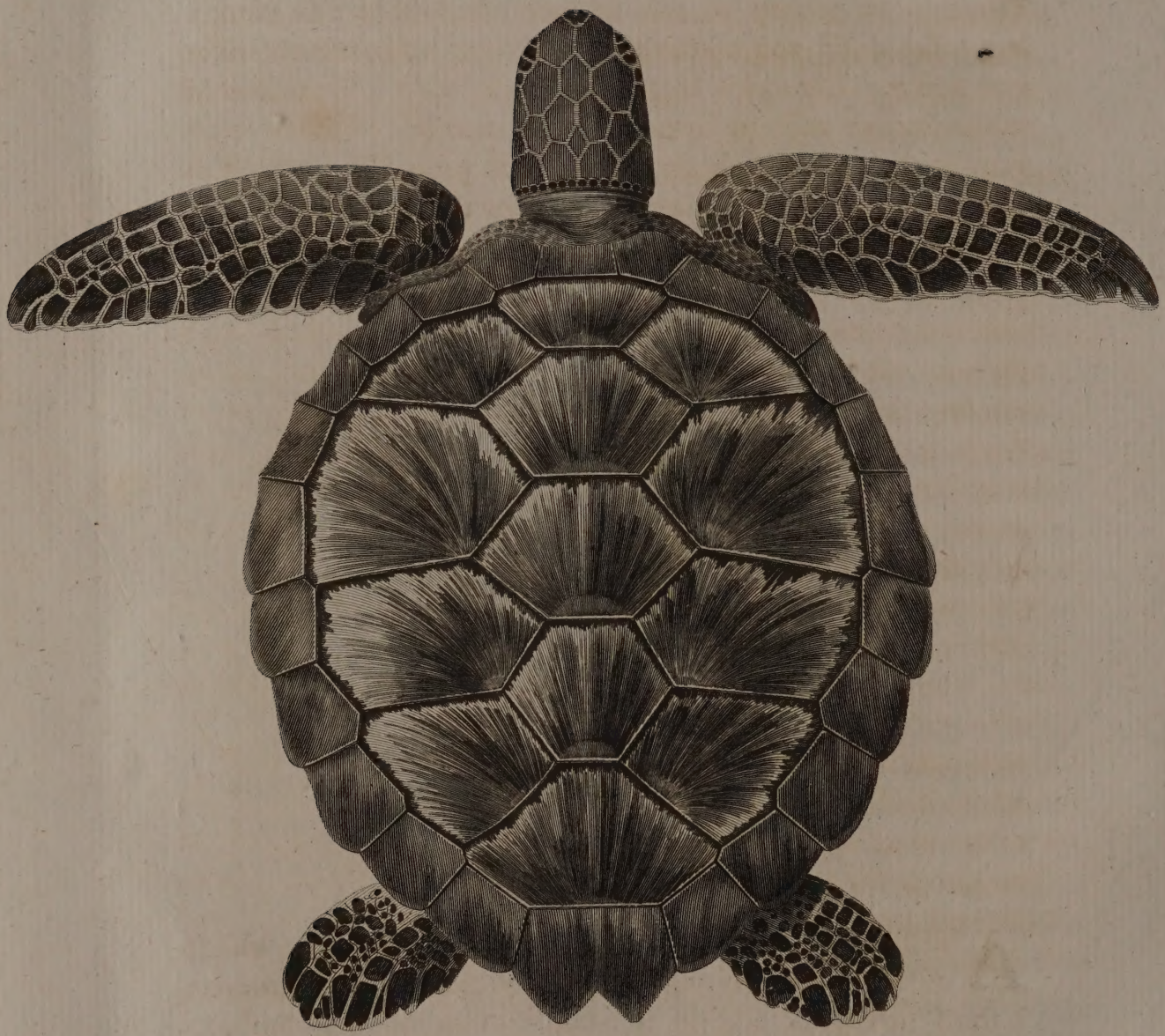
The fiſherman runs immediately to the bell, and finding thereby the particular line, hauls his priſoner in, but does not kill him; the hook being large, it generally catches him by the upper jaw, which is conſiderably longer than the under. He then pulls him out of the water, and puts a ſtrong iron ring through his jaw, ties a few yards of cord to it, and faſtens him to the ſhore, ſo he does with the reſt. Very rarely one hook is found empty. Thoſe that want fiſh at Girgé, a large town oppoſite, or at Achmim itſelf, come thither as to a fiſh-market, and every man takes the quantity he wants, buying them alive. Fiſh when dead do not keep here, which makes that precaution neceſſary. We bought two, which fully dined our whole boat's crew;

the fiſherman had then ten or twelve faſtened to the ſhore, all of which he pulled out and ſhewed us.

I APPREHEND that formerly this method of fiſhing was oftener practiſed, and better known than it is now, for I have ſeen, in ſeveral fiſhing towns, a tree, in which there was a fiſh with a ring through its noſe, and beſide it a bell. I likewiſe imagine that this is the fiſh which Mr Norden ſays the Kennoufs caught at Syene, and which he calls a Carp; but as I have already obſerved, ſtreams are not the haunt of leather-mouthed, or ſucking fiſh, as is the carp, but rather of ſuch as are powerfully furniſhed with fins, as this is, to ſtruggle with, and traverſe the current in all its directions. I believe the carp to be a fiſh of northern climates; I have never even ſeen them in theſe, they are certainly not in Ethiopia whence the Nile comes; their name, Cyprinus, ſeem to indicate they belong to Greece. They are found in the iſland of Cyprus, but whether excluſively from the reſt of the iſlands is what I cannot determine.

THIS fiſh has two fins upon its back; the firſt has a ſharp ſhort thorn before it, and is compoſed of ſeven longer ones, ſharp pointed, but much weaker in ſhape, reſembling the latine ſail of a boat. The one behind it is compoſed of eleven ſmall pliable bones, but not armed with any defence. The belly has two fins, made of pliable, unarmed bones likewiſe, and on its ſide near the gills it has two others of the ſame kind. The tail is forked into two ſharp thin narrow diviſions, that below are conſiderably ſhorter than above. Below its throat is a parcel of long bones hanging down like a beard, which grow longer as they approach the tail, the laſt being the largeſt of all.

THE



Tortoise

Heath Sc:

London Publish'd Dec.r 1.st 1769. by G: Robinson & Co.

The whole body of this fiſh is covered with ſilver ſcales much reſembling ſilver ſpangles, they lie cloſe together. There is no variety of colour upon the whole fiſh excepting a ſhade of red upon the end of the noſe, which is fat and fleſhy. His eye is large and black, with a broad iris of white ſtained with yellow. It has a number of ſmall teeth very ſharp and cloſely ſet, nature has probably given him this quantity of fins to ſave him from the crocodile, whom by his ſize he ſeems deſtined to feed.

CARETTA, or SEA-TORTOISE.

AMONG the natural productions of the Red Sea, which either have been or are at preſent articles of commerce, I ſhall juſt ſpeak a little of that ſpecies of the Teſtudo or Tortoiſe, called the Caretta or Hawk's-bill. It is greatly inferior in ſize to the Weſt Indian or American ſea-tortoiſe. The extreme length of the ſhell of this was 3 feet 7 inches, and

which

which was eſteemed a large one. Simple as it is, I do not know one good figure of it. This which I have ſubmitted to the reader may be depended upon for its exactneſs, otherwiſe the animal is well known, and has often been deſcribed.

Its back is covered like the reſt of other turtles, with a bony ſubſtance, and this again is covered by lamina, or ſcales of a thin tranſparent texture, variegated with dark brown ſtreaks, diſpoſed in each ſcale as radii proceeding from a centre. The outer rows of the great ſcales are irregular pentagons. The row that runs down the middle between theſe are regular hexagons, and round the whole circumference the large ſcales are incloſed by a kind of quadrangular frame firmly united; the broadeſt and largeſt of theſe ſcales being neareſt the tail. The loweſt of all, as it were in the centre of the loweſt part of the figure, is notched, the centre of this diviſion anſwering to a line drawn through the middle of the oval, and the head or occiput.

This fiſh lays a multitude of eggs. Some have ſaid that theſe are laid among ſtones, contrary to the practice of the large ſea-turtle, which lays them upon ſand. All I can ſay to this is, that I have ſeen them but ſeldom, and always upon ſand, but never among ſtones. The fiſh itſelf is a very dry and coarſe food, very different from that delicate ſpecies which comes from the Weſt Indies, if the difference does not lie a great deal in the cookery. At the time that I ate of this animal, I was going to view the junction of the Indian Ocean without the Straits of Babelmandeb, and the wind ſetting in contrary,

trary, we were in great fear of not being able to return, as the reader will have ſeen in our voyage. Particularly, I did not obſerve any of the green fat, ſo well known to our epicures, nor indeed any fat at all. When roaſted, it taſted to me much like old veal new killed. It is only an inhabitant of the mouth of the Gulf. They ſeldom come up the length of Mocha; when they do, they are few in number, are probably ſick, and not able to bear the agitation of the waves from the ſouth-weſters.

The Egyptians dealt largely with Rome in this elegant article of commerce. Pliny tells us, the cutting them for fineering or inlaying, was firſt practiſed by Carvilios Pollio, from which we would preſume that the Romans were ignorant of the Arabian and Egyptian art of ſeparating the lamina by fire, placed in the inſide of the ſhell when the meat is taken out; for theſe ſcales, though they appear perfectly diſtinct and ſeparate, do yet adhere, and oftener break than ſplit where the mark of ſeparation may be ſeen diſtinct. Martial * ſays, that beds were inlaid with it. Juvenal †, and Apuleius, in his tenth Book mentions that the Indian bed was all over ſhining with tortoiſe-ſhell in the outſide, and ſwelling with ſtuffing of down within. The immenſe uſe made of it in Rome may be gueſſed by what we learn from Velleius Paterculus ‡, who ſays, that when Alexandria was taken by Julius Cæſar, the magazines, or warehouſes, were ſo full of this article, that he propoſed to have made it the principal ornament of his triumph, as he did ivory

* Mart. lib. xii. and lxvii. epig. † Juv. ſat. xi. ‡ Vell. Pat. lib. ii. cap. 56.

ivory afterwards when triumphing for having happily finiſhed the African war.

THIS, too, in more modern times, was a great article in the trade to China, and I have always been exceedingly ſurpriſed, ſince near the whole of the Arabian Gulf is comprehended in the charter of the Eaſt India Company, that they do not make an experiment of fiſhing both pearls and tortoiſes; the former of which, ſo long abandoned, muſt now be in great plenty and excellence, and a few fiſhers put on board each ſhip trading to Jidda, might ſurely find very lucrative employment with a long-boat or pinnace, at the time the veſſels were ſelling their cargo in the port, and while buſied in this gainful occupation, the coaſts of the Red Sea might be fully explored.

Pearls.

London Published Dec.r 1.st 1789, by G. Robinson & C.o

Of PEARLS.

THE ſhips which navigated the Red Sea brought gold and ſilver from Ophir and Tarſhiſh; they brought myrrh, frankincenſe, and ivory, from Saba, and various kinds of ſpices from the continent of Aſia, acroſs the Indian ocean. If we judge by the little notice taken of them in very ancient times, the treaſures which lay nearer home, in their own ſeas, and upon their own ſhores, were very little ſought after, or ſpoken of, in the days when the navigation of the Arabian gulf was at its height. We are not, however, to believe that the pearl fiſhery, even in thoſe days, was totally neglected; but foreign trade was grown to ſuch a magnitude, and its value ſo immenſe, that we are not to be ſurpriſed, that articles that were only a matter of ornament and luxury, or of domeſtic uſe, and did not enter into the medium of

commerce, were little ſpoken of, however cloſely followed and well underſtood.

We gather from ſcripture, the only hiſtory of theſe early times to be depended upon, that precious ſtones were imported from the ſouthern coaſt of Africa. This trade, however great it might be, is mentioned but ſlightly, and as it were accidentally, being abſorbed in the very great articles of commerce then ſpoken of. In the ſame manner we read of the beauty and excellence of pearls curſorily introduced, often by alluſions and compariſons throughout the ſacred books, but always in a manner which ſufficiently ſhews the great intrinſic eſtimation in which they were held.

Pearls are found in all the four quarters of the world, but in no degree of excellence, excepting in the eaſt of Africa and in Aſia. They are in every part of the Red Sea, they are in the Indian Ocean, in that low part of the coaſt of Arabia Felix called the Baherein, which joins to the Gulf of Perſia. There are banks where they are found about Gombron to the eaſtward of that Gulf, or in the flat coaſt there; and in the ſeas which waſh the iſland of Ceylon, many have been found of the greateſt beauty and price; and for number, they are nowhere ſo plentiful as in the Baherein, between the coaſt of Arabia Felix and the iſland of Ormus, whence they are tranſported to Aleppo, then ſent to Leghorn, and circulated through Europe, and this above all others is the market for ſeed pearls.

The oyſter is currently reported to be the ſpecies of fiſh where this precious gueſt is lodged, and many a weary

ſearch and inquiry I have made after theſe oyſters in the Red Sea, deſpairing always to ſee a pearl, till we had firſt found an oyſter. The fact, however, turned out to be, that there are no ſuch fiſh as oyſters in the Arabian Gulf, and though our ſucceſs in finding pearls was ſmall, yet we got from the natives of the coaſt a ſufficient number as well as information, to put it beyond doubt to what fiſh this beautiful and extraordinary production belonged.

PEARLS are produced only in ſhells that are bivalves, that is, which have an upper and lower ſhell cloſing by a hinge in a manner little differing from the oyſter. It is commonly ſaid by the fiſhermen, that all bivalves in the Red Sea have pearls of ſome kind in them. This is a very rude and large view of the matter, for though it is true that ſome excreſcences, or ſecretions, of the nature of pearls, may be found in the biſſer, and the large bivalves with which this ſea abounds, yet it is well known to all converſant in theſe matters, that many of the pearl ſhell itſelf (I ſhall not call it an oyſter, for it is not one) are found without any pearl or likeneſs of pearl in them; being, I ſuppoſe, not yet arrived to that age when the extravaſation of that juice which forms the pearl happens.

THERE are three ſhell fiſh in the Red Sea which regularly are ſought after as containing pearls. The firſt is a muſſel, and this is of the rareſt kind, whether they are now failed in number, or whether they were at any former time frequent, is now unknown. They are chiefly found in the north end of the Gulf, and on the Egyptian ſide. The only part I have ever ſeen them was about Coſſeir, and to the northward of it, where I muſt obſerve there was an ancient

port, called Myos Hormos, which commentators have called the Port of the Mouſe, when they ſhould have tranſlated it, the Harbour of the Muſſel. This fiſh contains often pearls of great beauty for luſtre and ſhape, but ſeldom of a white or clear water. Pliny relates this to be the caſe in the Italian ſeas, and alſo in the Thracian Boſphorus, where he obſerves they are more frequent.

The ſecond ſort of ſhell which generally contains the pearl is called Pinna. It is broad and ſemicircular at the top, and decreaſes till it turns ſharp at the lower end, where is the hinge. It is rough and figured on the outſide, of a beautiful red colour, exceedingly fragil, and ſometimes three feet long. In the inſide it is cloathed with a moſt beautiful lining called Nacre, or mother-of-pearl, white, tinged with an elegant bluſh of red. Of this moſt delicate complexion is the pearl found in this fiſh, ſo that it ſeems to confirm the ſentiments of M. Reamur on the formation of pearls, that they are formed of that glutinous fluid which is the firſt origin of the ſhell, that it forms the pearl of the ſame colour and water that is communicated to it from that part of the ſhell with which it is more immediately in contact, and which is generally obſerved in the pinna to be higher in colour as it approaches the broadeſt, which is the reddeſt end.

Upon the matureſt conſideration, I can have no doubt that the pearl found in this ſhell is the penim or peninim rather, for it is always ſpoken of in the plural, to which alluſion has been often made in ſcripture. And this derived from its redneſs is the true reaſon of its name. On the contrary, the word pinna has been idly imagined to be de-

rived from penna, a feather, as being broad and round at the top, and ending at a point, or like a quill below. The Engliſh tranſlation of the ſcripture, erroneous and innaccurate in many things more material, tranſlates this peninim by rubies *, without any foundation or authority, but becauſe they are both red, as are bricks and tiles, and many other things of baſe and vile materials. The Greeks have tranſlated it literally pina, or pinna, and the ſhell they call Pinnicus; and many places occur in Strabo, Elian, Ptolemy, and Theophraſtus, which are mentioned famous for this ſpecies of pearl. I ſhould imagine alſo, that by Solomon ſaying it is the moſt precious of all productions, he means, that this ſpecies of pearl was the moſt valued, or the beſt known in Judea. For though we learn from Pliny that the excellency of pearls was their whiteneſs, yet we know the pearls of a yellowiſh caſt are thoſe eſteemed in India to this day, as the peninim, or reddiſh pearl was in Judea in the days of Solomon.

The third ſort of pearl-bearing ſhell is what I ſuppoſe has been called the Oyſter; for the two ſhells I have already ſpoken of ſurely bear no ſort of likeneſs to that ſhell-fiſh, nor can this, though moſt approaching to it, be ſaid any way to reſemble it, as the reader will judge by a very accurate drawing given of it, now before him,

Bochart

* See Proverbs, chap. xxxi. verſe 10. But in Job, where all the variety of precious ſtones are mentioned, the tranſlator is forced, as it were unwillingly, to render Peninim pearls, as he ought indeed to have done in many other places where it occurs. Job, chap. xxviii. verſe 18.

Bochart ſays theſe are called Darra, or Dora in Arabic, which ſeems to be the general word for all pearls in ſcripture, whereas the peninim is one in particular. In the Red Sea, where it holds the firſt rank among pearls, it is called Lule ſingle, or* Lulu el Berber, *i. e.* the pearl of Berber, Barabra, or Beja, the country of the Shepherds, which we have already ſpoken of at large, extending from the northern tropic, ſouthward, to the country of the Shangalla or Troglodytes. Androſthenes ſays, the ancient name of theſe pearls was Berberis, which he believes to be an Indian word, and ſo it is, underſtanding, as the ancients did, India to mean the country I have already mentioned between the tropics.

The character of this pearl is extreme whiteneſs, and even in this whiteneſs Pliny juſtly ſays there are ſhades or differences. To continue to uſe his words, the cleareſt of theſe are found in the Red Sea, but thoſe in India have the colour of the flakes, or diviſions of the lapis ſpecularis. The moſt excellent are thoſe like a ſolution of alum, limpid, milky like, and even with a certain almoſt imperceptible caſt of a fiery colour. Theophraſtus ſays, that theſe pearls are tranſparent, as indeed the foregoing deſcription of Pliny would lead us to imagine; but it is not ſo, and if they were, it is apprehended they would loſe all their beauty and value, and approach too much to glaſs.

It has been erronenouſly ſaid, that pearl ſhells grow upon rocks, and again, that they are caught by nets. This is

* Bochart reads this Lala falſely, miſtaking the vowel point *a* for *u*, but there is no ſuch word in Arabic.

is certainly a contradiction, as nobody would employ nets to gather fish from among rocks. On the contrary, all kinds of pearl are found in the deepest, stillest water, and softest bottom. The parts of most of them are too fine to bear the agitation of the sea among rocks. Their manners and œconomy are little known, but, as far as I have observed, they are all stuck in the mud upright by an extremity, the mussel by one end, the pinna by the small sharp point, and the berberi, or lule, by the hinge or square part which projects from the round.

In shallow and clear streams I have seen small furrows or tracts, upon the sandy bottom, by which you could trace the mussel, from its last station, and these not straight, but deviating into traverses and triangles, like the course of a ship in a contrary wind laid down upon a map, the tract of the mussel probably in pursuit of food. The general belief is, that the mussel is constantly stationary in a state of repose, and cannot transfer itself from place to place. This is a vulgar prejudice, and one of those facts that are mistaken for want of sufficient pains, or opportunity, to make more critical observation. Others finding the first opinion a false one, and that they are endowed with power of changing place like other animals, have, upon the same foundation, gone into the contrary extreme, so far as to attribute swiftness to them, a property surely inconsistent with their being fixed to rocks. Pliny and Solinus say, that the mussel have leaders, and go in flocks, and that their leader is endowed with great cunning, to protect himself and his flock from the fishers, and when he is taken, the others fall an easy prey. This however I think we are to look upon as a fable. Some of the most accurate observers having disco-

vered

vered the motion of the muſſel, which is indeed wonderful, and that they lie in beds, which is not at all ſo, have added the reſt to make their hiſtory complete.

It is obſerved that pearls are always the moſt beautiful in thoſe places of the ſea where a quantity of freſh water falls. Thus in the Red Sea they were always moſt eſteemed that were fiſhed from Suakem ſouthward, that is in thoſe parts correſponding to the country anciently called Berberia, and Azamia, from reaſons before given; on the Arabian coaſt, near the iſland Camaran, where there is abundance of freſh water; and the iſland of Fooſht, laid down in my map, where there are ſprings; there I purchaſed one I had the pleaſure to ſee taken out of the ſhell. It has been ſaid that the fiſh of theſe ſhells are good, which is an error; they were the only ſhell-fiſh in the Red Sea I found not eatable. I never ſaw any pearl ſhells on either ſide ſouthward of the parallel of Mocha in Arabia Felix. As it is a fiſh that delights in repoſe, I imagine it avoids this part of the gulf, as lying open to the Indian Ocean, and agitated by variable winds.

In that part of my narrative where I ſpeak of my return through the Deſert of Nubia, and the ſhells found there, I have likewiſe mentioned the muſſel found in the ſalt ſprings that appear in various parts of that deſert. Theſe likewiſe travel far from home, and are ſometimes ſurpriſed by the ceaſing of the rains, at a greater diſtance from their beds than they have ſtrength and moiſture to carry them. In many of theſe ſhells I have found thoſe kind of excreſcences which we may call Pearls, all of them ill-formed, foul, and of a bad colour, but of the ſame conſiſtence, and lodged in

in the ſame part of the body as thoſe in the ſea. The muſſel, too, is in every reſpect ſimilar, I think larger, the outer ſkin or covering of it is of a vivid green. Upon removing this, which is the epidermis, what next appears is a beautiful pink, without gloſs, and ſeemingly of a calcareous nature. Below this, the mother-of-pearl, which is undermoſt, is a white without luſtre, partaking much of the blue, and very little of the red, and this is all the difference I obſerved between it and the pearl-bearing muſſel in the Red Sea; but even this latter I always found in ſtill water, ſoft bottom, and far from ſtony or rocky ground. None of theſe pearl muſſels, either in the Red Sea or the deſert, have any appearance of being ſpinners, as they are generally deſcribed to be.

I HAVE ſaid that the Baherein has been eſteemed the place whence the greateſt quantity of pearls are brought. I would be underſtood to mean, that this has been the reputed greateſt regular market from antiquity to the preſent time. But Americus, in his ſecond navigation, ſays, that he found an unknown people of that continent, who ſold him above 54 pound weight for 40 ducats*. And Peter the Martyr ſays, that Tunacca, one of the kings of that country, ſeeing the great deſire the Spaniards had for pearls, and the value they ſet upon them, ſent ſome of his own people in ſearch of them, who returning the fourth day, brought with them 12 pounds of pearls, each pound 8 ounces. If this is the caſe, America ſurely excells both Africa and Aſia in the quantity of this article.

* The Spaniards have no gold ducats, ſo this muſt have been ſilver, value about a crown, ſo that the ſum-total was L. 10 Sterling.

The value of pearls depends upon ſize, regularity of form, (for roundneſs is not always requiſite) weight, ſmoothneſs, colour, and the different ſhades of that colour. Suetonius ſays, that Cæſar gave to Servilia, Marcus Brutus's mother, a pearl worth about L. 50,000 of our money. And Cleopatra, after vaunting to her lover, Mark Antony, that ſhe would give him a ſupper which ſhould coſt two hundred and fifty-thouſand pounds, for this purpoſe diſſolved one of the pearls which ſhe carried in her ears, which amounted to that price, and drank it. The other, it is ſaid, was carried afterwards to Rome by Auguſtus Cæſar, ſawn in two, and put in the ears of Venus Genetrix.

The price of pearls has been always variable. Pliny ſeems to have over-rated them much, when he ſays they are the moſt valuable and excellent of all precious ſtones. He muſt probably have had thoſe juſt mentioned in his view, for otherwiſe they cannot bear compariſon with diamonds, amethyſts, rubies, or ſapphires.

It has been obſerved to me by the pearl fiſhers in the eaſt, that when the ſhell is ſmooth and perfect, there they have no expectation of a pearl, but are ſure to find them when the ſhell has begun to be diſtorted and deformed. From this it would ſeem, as the fiſh turned older, the veſſels containing the juice for forming the ſhell, and keeping it in its vigour, grew weak and ruptured; and thence, from this juice accumulating in the fiſh, the pearl was formed, and the ſhell brought to decay, perfectly in the manner, as I have before ſaid, ſuppoſed by M. Reamur.

In Scotland, eſpecially to the northward, in all rivers running from lakes, there are found muſſels that have pearls of more than ordinary merit, though ſeldom of large ſize. I have purchaſed many hundreds, till lately the wearing of real pearls coming into faſhion, thoſe of Scotland have increaſed in price greatly beyond their value, and ſuperior often to the price of oriental ones when bought in the eaſt. The reaſon of this is a demand from London, where they are actually employed in work, and ſold as oriental. But the excellency of all glaſs or paſte manufactory, it is likely, will keep the price of this article, and the demand for it within bounds, when every lady has it in her power to wear in her ears, for the price of ſixpence, a pearl as beautiful in colour, more elegant in form, lighter and eaſier to carry, and as much bigger as ſhe pleaſes, than thoſe famous ones of Cleopatra and Servilia. I ſhall only further obſerve, that the ſame remark on the ſhell holds in Scotland as in the eaſt. The ſmooth and perfect muſſel ſhell rarely produces a pearl, the crooked and diſtorted ſhell ſeldom wants one.

I shall here mention a very elegant ſort of manufactory, with which I cannot poſitively ſay the ancients were acquainted, which is fineering, or inlaying with the inſide of the ſhell called mother-of-pearl, known to the dealers in trinkets all over Europe, and in particular brought to great perfection at Jeruſalem. That of Peninim, though the moſt beautiful, is too fragil and thin to be employed in large pieces. It is the nacre, or mother-of-pearl taken from the Lulu el Berberi, or what is called Abyſſinian oyſter, principally uſed in thoſe fine works. Great quantities of this ſhell are brought daily from the Red Sea to Jeruſalem. Of theſe all the

the fine works, the crucifixes, the wafer-boxes, and the beads, are made, which are ſent to the Spaniſh dominions in the new world, and produce a return incomparably greater than the ſtaple of the greateſt manufactory in the old.

THE END.

PART OF THE MEDITERRANEAN SEA

JERUSALEM

Degrees of Longitud

ALEXANDRIA

Rosetto

Damiata

DELTA

Mansoura

BAHEREIN

SHERGIEH

Siwah

Birket el Karoun

CAIRO

MTAJA

MWHEHIE

SUEZ

Howadat Arabs

Etfa

LOWER EGYPT

FESNE

MINE

Dar el Bagra

Ashmounein

Enfeh or Shekh Abade

Ol Ansinoopolis

M.t Agarib

EL VOSTANI OR MONFALOUT

Oasis Farfara

SIOUT

GAWR SHERGIEH

Gawa Gadeh

Aboutige

Sandy

SaltWater

UPPER EGYPT

ACHMIM ol PANOPOLIS

GIRGE

DENDERA

OASIS MAGNA

El Wah

Sheikh Haled

Negade

KENNE el Gabia

COSSEIR

CUS

RUFT ol Ophitas

THEBES

LUXOR

ARABIA

Tropic of Cancer

Cubbabeesh Arabs

GREAT DESERT of SELIMA

BYSARABRA

Mour bad Water

Selima good Water

DEIR

Ibrim

Cataract of Channadi

Succoot

NILE

GREAT DESERT of NUBIA

Mofcho

Sharp Rocks

CHIGGRE

Accaba

El Moot

Del Amed

Dimokea

Wandi Halfoub

Assa Nagga

Assen Baybe

Imoan

Umbraja

Haweda

Dongola

Harir

Chaigie

Takalo

Takaki

KORTI

Cubbabeesh Arabs

DESERT of BAHIOUDA

Caravan of Dar Fowr to Mecca by Dongola

Caravan of Sudan directly to Mecca

Route of the Great Caravan from the Niger called the Caravan of Sudan to Cairo

Beni Gerar Arabs

KURGOS

Jaheleen Arabs

Jaheleen

Beni Faisara Arabs

Chandi

Derreim

NUBA

HARRAZA

NUBA People

Limits of the Tropical Rains to the Northward

Gerri

Halfaia

Halifoon

THE ISLAND OF MEROE

SENNAAR

KORDOFAN PROVINCE

Lately Conquered by SENNAAR from DAR FOWAR

Lebiat a Collection of Villages of NUBA

Shillook Now Fungo

Bahar el Abiad or White River

Bahar el Azegrie

Shangalla

Mandera

Baafa

Walcait

Segud

Tenawa

Bacras

Delwarie

Ganjar

Cuba

Fazuclo Villages

Cataract

Great Cataract

DYRE AND TEGLA

NUBA People

Gibel Forfar

Garah antica

Vallis

Congas

Umbarma

Sinafses

Source of the Nile

MINE

Amora Galla

Bafso Galla

K. OF BIZAMO

K. OF DAMOT

Upper K. of Bafso Galla

Debra

Gaza

Muga

Alamale

K. OF GURAGUE

K. OF ENAREA

K. OF CAFFA

K. OF CAMBAT

Bizamo

Marthes

Chillalo Mts

BOSHAM

KINGDOM OF GINGIRO

GALLA

GOJAM

GOJAM

Abargale

Salao

TZANA or the LAKE DEMBEA

K. of BEGEMDER

Dembea

Dixan R.

Tacazze R.

Mareb River

Athara of Athaborras

Welled Amrah Chief Tribe of the Hallanga

HALLANGA

TAKA

NUBIA

Abyssinian Mts

Ras Fartak

Ras Mohammed

Ras Ghelan

Ras Abu Somer

Ras Benas

Ras Hadarba

Ras Dib

Ras Selah

Ras Mayne

Ras Shaduan

Ras Sanafer

Ras Bushan

Ras Gimsah

Ras Abu Shoshah

Ras Gharib

Ras Zeitah

Ras Mohammed

Ras Ghelan

Ras Abu Somer

Ras Benas

Ras Hadarba

Ras Dib

Ras Selah

Ras Mayne

Ras Shaduan

Ras Sanafer

Ras Bushan

Ras Gimsah

Ras Abu Shoshah

Ras Gharib

Ras Zeitah

Zeit Island

Sepiteen Islands

Shadwan Island

Emerald Island

Mayas Island

Tibbet Macowar

Tibbet Sheikh

Tibbet Gobsoin

Tibbet Baker

Tibbet Ras el Hint

Tibbet Ras Mohan

Tibbet Ras Abu Shoshah

Tibbet Ras Gharib

Tibbet Ras Zeitah

Tibbet Ras Mohammed

Tibbet Ras Ghelan

Tibbet Ras Abu Somer

Tibbet Ras Benas

Tibbet Ras Hadarba

Tibbet Ras Dib

Tibbet Ras Selah

Tibbet Ras Mayne

Tibbet Ras Shaduan

Tibbet Ras Sanafer

Tibbet Ras Bushan

Tibbet Ras Gimsah

Tibbet Ras Abu Shoshah

Tibbet Ras Gharib

Tibbet Ras Zeitah

ADOU JUBEL

KALAIS or AREGO

Naumun

Abumaad

Maidun

Nawra

Ajan

Belsama

Dejdira

Aboukaleb

Farcelard

Mudabdi

Rabbe

Nabat

To
THE KING.
This Map, Containing a
CHART
of the
Arabian Gulf
With its Egyptian, Ethiopian and Arabian Coasts,
from SUEZ to
BAB EL MANDEB,
A Journey through ABYSSINIA to GONDAR, its Capital,
From thence to the Source of the
Nile
The whole of that RIVER, from its Source to the
MEDITERRANEAN.
Now first laid down from Astronomical Observations —
OF
All those points necessary to Ascertain the form of its Course,
The Return by SENNAAR and the GREAT DESERT of
Nubia and Beja
All laid down by ACTUAL SURVEY with the largest
and most perfect Instruments now in use.
By His MAJESTY'S most
dutiful and faithful Subject & Servant
James Bruce

PLAN of the Harbour of RABAC. Lat. 22.46
English Mile
PLAN of the Harbour of IBRAIM. Lat. 20.12
English Miles
PLAN of the Harbour of SEBT. Lat. 17.38
English Miles

Tropic of Cancer

RABAC
Dergh
Ras Hatiba
Oblaour Rio
MAKAFAT
MECCA
GIDDA
Shekh Ammer
Mersa Gidda
Goass
Mersa Soli
Marsbat
IBRAIM
Abelat
Gibbel Surrymet
Mountains of Konfodah
KONFODAH
Daghebit
Sabaea
Massegie
No Haud
Hafseer
Kotumbalgo
Wedana
Mersa Hotoit
Mersa Sebi
Gibbel Fenna Naschef
Ras Tarfa
Gibbel Teir
Loheia
Camaran
Kebait
Gibbel Segnia
Jibbel el Tair
Jibbel el Duir
Mocha
Ras Assabs
Assabs
Arab Island
Cape Babelmandeb
Island of Babelmandeb
Raheeda
K. of DANCALI
Bay of ZEILA
TAJOURA
From this to Cape Gardefan is the Myrrh and Incense Country.
Hanazo River
K. of DAWARO
K. of AMHARA
K. of BALI
From this the Galla made their irruption in 1559.
K. of IFAT
Hawash River
K. of FATIGAR
Bargamo
Gumar
KINGDOM OF ADEL
Cape Fuel of Adel
Here the Portuguese found King David Encamped in the Year 1520.
Modeida
Sana
Damar
Jibbel Sejinia
Jibbel Zuker
Jibbel Duir
Abb
Taas
Mosaschid
Jubla
Engana
Shiho
Temben
Higherbur
Lowerbur
Salt Pits
Gramer
Tigre
Dobas
Bazorta Shiho
Fremona
Amba Salam
Coulloa
Tsana
Zaire
Nile
Mountains of Lasta
Mountains of Abyssinia
Mountains of Gojam
Mountains of Amhara
Mountains of Shoa
Mountains of Narea
Mountains of Gingiro
Mountains of Kaffa
Mountains of Enarea
Mountains of Gaboo
Mountains of Gonga
Mountains of Damot
Mountains of Agow
Mountains of Lamalmon
Mountains of Dambea
Mountains of Fatigar
Mountains of Ifat
Mountains of Adel
Mountains of Zeila
Mountains of Abex
Mountains of Dancali
Mountains of Bali
Mountains of Dawaro
Mountains of Hadea
Mountains of Tigre
Mountains of Dobas
Mountains of Shoa
Mountains of Narea
Mountains of Gingiro
Mountains of Kaffa
Mountains of Enarea
Mountains of Gaboo
Mountains of Gonga
Mountains of Damot
Mountains of Agow
Mountains of Lamalmon
Mountains of Dambea
Mountains of Fatigar
Mountains of Ifat
Mountains of Adel
Mountains of Zeila
Mountains of Abex
Mountains of Dancali
Mountains of Bali
Mountains of Dawaro
Mountains of Hadea
Mountains of Tigre
Mountains of Dobas

J. Walker Sculp. 5 Margaret Street, Cavendish Square.

20 25 30 35

35 30 25 20 15 10 5 0 5 10 15 20 25 30 35

Candia

Cyprus

MEDITERRANEAN SEA

Tract of the Variable

Alexandria

CAIRO

Pyramids

Badah

Migdol

LOWER EGYPT

UPPER EGYPT

Cossir

Syene

Tropic of Cancer

GREAT Desert of NUBIA

NILE

Dongola

Limits of the Tropical Rains

SENNAAR

Perpetual Rain from about four Degrees of South Lat. to EQUINOCTIAL

A F R I C A

Galla

Limits of the Tropical Rains

Tete

Silver Mines

ZAMBEZE R.

Sena

MANOMOTAPA

FURA M.

Gold Mines

Massapa

SOFALA

Sofala

SABIA

SEDANDA

INHAMBANE

Tropic of Capricorn

Cape Curre

HOTENTOTS

Tract of the Variable

Scale

100

Cape of Good Hope

To
THE RIGHT REVD
JOHN
Lord Bishop
of
CARLISLE
This Map Shewing the Tract
of
SOLOMONS FLEET
in their three Years Voyage from
THE
ELANITIC GULF to OPHIR and TARSHISH
the Necessity of Employing in it that
space of time
is Dedicated by his
Most Obedient Servant
James Bruce

40 45 50 55

s of Longitude East of Greenwich

Winds

ARABIA PETRAEA

ARABIA

ARABIA DESERTA

ARABIA FELIX

RED SEA

Palmyra

RABACK

MECCA

JIDDA

DAHALAC

LOHEIA

MOKA

C. Babelmandeb

Babelmandeb

ABYSSINIA

DIRA

Socotra Island

C. Gardefan

K. OF BALI

K. OF DAWARO

K. OF IFAT

K. OF FATIGAR

Hawash River

K. OF MARA KINGDOM OF ADEL

SAMHAR

Galla

River Yuba

River Ade

River Zebee or Quilmancy

North Lat.

Degrees

Forrest

TARSHISH Melinda

Moka

Pemba

Zanzibar

Monsia Is

ZANGUEBAR

Patrum

Padrao

Is. Del Almirante

Is. St. Francisco

Is. Alphonsina

ISLES

I. Natal

Is. Pedro

John Martins Island

John de Nova Is.

12 Isles

THE

Anjouan

Isle Glorieuse

Mohilla

Comoro Is.

Mayota

Mosambique

Channel of

MADAGASCAR

Shallows

Augustin

Burbon Island

Leagues

200 300

J. Walker Sculp.

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